Federation Proceedings

VOLUME 17 *March 1958* NUMBER 1, PART II

FORTY-SECOND ANNUAL MEETING

PHILADELPHIA, PENNSYLVANIA, APRIL 14–18, 1958

General Information

Registration

REGISTRATION desks will be located in the headquarters hotels on Sunday, April 13, from 9:00 A.M. to 9:00 P.M., and on Monday, April 14, from 5:00 to 9:00 P.M. From Monday through Friday noon, the registration center will be located in Convention Hall and will be open daily from 8:00 A.M. to 5:00 P.M. The registration fee will be $6.00. The official registration badge must be worn to secure admission to all sessions and other Federation activities.

There will be a separate registration desk in Convention Hall for non-professional guests who do not wish to attend scientific sessions and for industrial exhibitors and press representatives. Women guests will register at their Hospitality Headquarters, Rooms 107–108, Bellevue-Stratford Hotel.

Headquarters Hotels

Headquarters hotels will be the Benjamin Franklin for Pharmacology and Physiology; the Sheraton for Biochemistry and Nutrition; the Bellevue-Stratford for Pathology and Immunology.

Scientific Sessions

Scientific sessions will be held in Convention Hall; the Penn Sherwood Hotel; the Food Services Building, Nurses Building and Mills Building of the Philadelphia General Hospital; Irvine Auditorium and Museum Auditorium of the University of Pennsylvania. *See map of the area and key to meeting rooms on page 543; also see double-page spread for complete Federation program.*

Intersociety sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting" are scheduled throughout the week (see pages 545–549 for complete program). Two intersociety symposia are scheduled: "Neuropharmacology" (Tuesday morning) and "Cultivation and Use of Animal and Plant Cells" (Wednesday morning and afternoon).

Morning sessions will begin promptly at 9:00 A.M.; afternoon sessions, at 1:30 P.M.

Joint Session and Motion Pictures

The Joint Session of the Federation will be held Tuesday, April 15, at 8:30 P.M., in the Main Auditorium, Convention Hall. The topic will be "The Biology of the Cancer Cell" (see page 544 for complete program). Dr. Alan C. Burton, Chairman of the Federation Board, will be chairman of the session.

The Motion Picture session will be Monday, April 14, at 8:00 P.M. in the Rose Garden, Bellevue-Stratford Hotel.

Programs and Abstracts

Copies of *Federation Proceedings*, March 1958 (Part I, Abstracts; Part II, Program), will be on sale near the registration area in Convention Hall and at the three Headquarters Hotels on Sunday (9:00 A.M.–9:00 P.M.) and Monday (5:00–9:00 P.M.). The Abstracts are priced at $5.00 and the Program at $1.00 a copy.

Other Meetings

The American Society for Artificial Internal Organs and the Histochemical Society will hold scientific sessions on Sunday and Monday, April 13 and 14. A listing of the time and location of these sessions is given in the double-page spread. Those desiring to attend these meetings should register at the Federation Registration Desk; the badge issued entitles the bearer to attend the Federation scientific sessions as well as those of the above societies.

Federation Board and Society Council Meetings

For a listing of the meetings of the Federation Board and of the Councils of the six societies, see double-page spread.

Society Business Meetings

Society business meetings are scheduled for Tuesday and Thursday afternoons. See program of each society for time and location.

Placement Service

The Federation Placement Service will provide interview facilities in Philadelphia as it has done in former years. Offices will be located in the Center Building, Convention Hall, and will be open for candidate registration Sunday, April 13, from 1:00 to 5:00 P.M. Registration of employers will begin Monday, April 14, at 8:15 A.M. The office will be open from 8:15 A.M. to 5:00 P.M., Monday through Thursday. Interviews will be scheduled Tuesday through Thursday during the above hours. The Bulletin Board Room will be open until 6:00 P.M. Monday through Wednesday. Employers who wish to use the interview facilities at Philadelphia must be annual subscribers to the Placement Service Bulletin or subscribe to the single February List of Candidates. Identification forms were mailed to such subscribers about March 15 and up to three identification cards can be issued for each subscription. If the above forms are completed and returned to the Washington office before March 31, the cards identifying the authorized users of each subscription will be awaiting them at the Employer's Registration Desk.

Press Room

The Press Room will be located in Room 304, Convention Hall. The office will open at 1:00 P.M. Sunday, April 13. Dr. Richard J. Winzler, Chairman of the Federation Public Information Committee, has arranged to have members of the Committee and a staff available to assist press representatitives in securing press releases and arranging press conferences. Mr. Ralph A. Rohweder will be in charge of the Press Room.

Exhibits

Industrial Scientific, Member and Institutional Exhibits will be located in the Grand Exhibition Hall, Convention Hall. Inspection periods will be as follows: Monday through Thursday, 9:00 A.M.–5:00 P.M.; Friday, 9:00 A.M.–1:00 P.M. A list of exhibitors, with a brief description of displays, and a floor plan of space locations will be found on pages 673–686.

Federation Office

A Federation Office will be located in Room 305, Convention Hall, and in Rooms 216–217, Bellevue-Stratford Hotel. The Office in Convention Hall will be open daily from 8:00 A.M. to 5:00 P.M.; in the Bellevue-Stratford, from 8:00 A.M. to 9:00 P.M.

Special Functions

Society dinners, special scientific dinner meetings, group luncheons and breakfasts, and other informal functions which have been scheduled through the Federation Office, are listed in the double-page spread. Tickets will be on sale in the registration area, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel.

Ladies Hospitality Committee

A hospitality committee, with Mrs. Carl F. Schmidt as chairman, has planned activities for the wives of members and non-member scientists during the week of the meetings. Ladies are asked to register on Monday, April 14, between 9:00 A.M. and 9:00 P.M in Rooms 107–108, Bellevue-Stratford Hotel. See schedule of activities, p. 686.

Message Center

A message center will be located in the corridor off the Main Lobby, Convention Hall, for distribution of mail and exchange of personal messages. A visible index of registrants will also be available near this center.

Information Desk

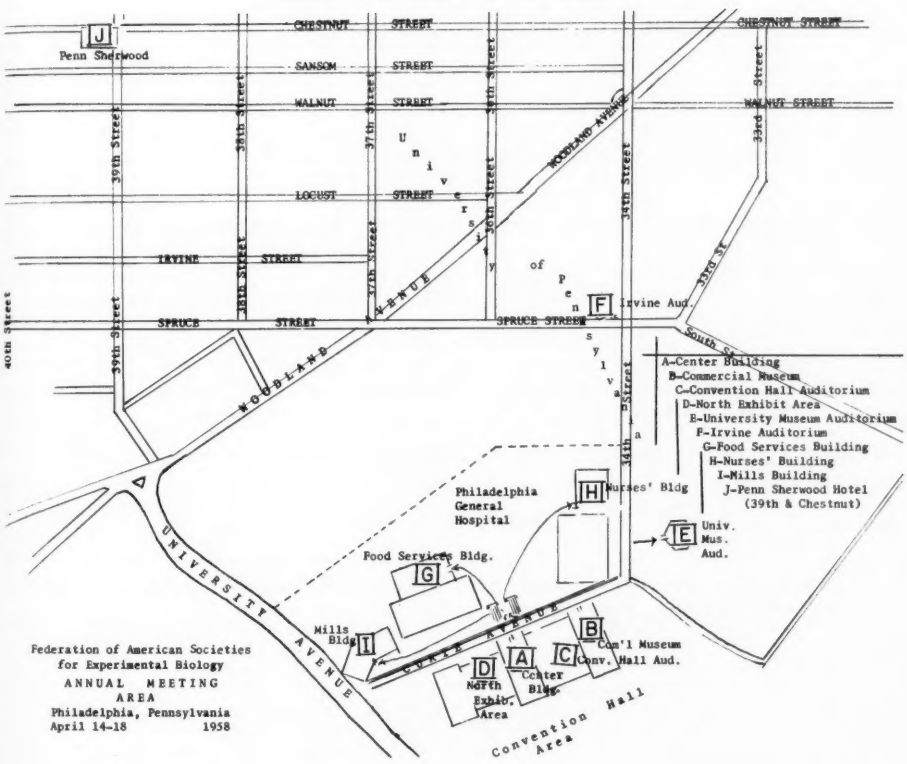
The information desk will be located in the registration area, Convention Hall.

Lost and Found

All articles left in session rooms will be brought to the Federation Office, Convention Hall. Owners of lost property should call at this Office.

NOTE: *An asterisk* following an author's name indicates "by invitation". For complete institutional connection and address, see abstract, Part I.*

CONVENTION HALL AREA



Federation of American Societies for Experimental Biology
ANNUAL MEETING
AREA
Philadelphia, Pennsylvania
April 14-18 1958

KEY TO MEETING ROOMS

Convention Hall

Rooms A, B—South Exhibit Area
Rooms C, D, E, F, 101, 200, 201, 202, 300, 400, Ballroom—Main Auditorium Building
Rooms X, Y, Z—Commercial Museum

University of Pennsylvania

Irvine Auditorium
Museum Auditorium

Philadelphia General Hospital

Food Services Building
Nurses Building
Mills Building

Penn Sherwood Hotel

Ballroom
Della Robbia Room

Federation Program

PHILADELPHIA, APRIL 14–18, 1958

Joint Session of the Federation

TUESDAY, APRIL 15, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

Chairman: Alan C. Burton

THE BIOLOGY OF THE CANCER CELL

Opening remarks. F. M. BURNET.[1] *The Walter and Eliza Hall Inst. of Med. Research, Melbourne, Australia.*

The biochemical approach. VAN R. POTTER. *McArdle Memorial Lab., Madison, Wis.*

The radiobiological attack. ARTHUR C. UPTON. *Oak Ridge Natl. Lab., Oak Ridge, Tenn.*

Viruses, genes and cancer. ROBERT C. MELLORS. *Memorial Ctr. for Cancer and Allied Diseases, New York City.*

Motion Pictures

MONDAY, APRIL 14, 8:00 P.M.—BELLEVUE STRATFORD, ROSE GARDEN

Chairman: Robert S. ALEXANDER

Radiation-induced abnormalities in dividing human cancer cells grown in tissue culture. JOHN L. TULLIS. *New England Deaconess Hosp., Boston.* (Pathol.)

Microcinematographic demonstration of mast cell disintegration in living isolated loose connective tissue of mice. THOMAS F. DOUGHERTY AND GOTTLIEB L. SCHNEEBELI.* *Univ. of Utah College of Medicine.* (Physiol.)

Effects of metrazol, serotonin and schizophrenic sera on adult brain cells in tissue culture. R. S. GEIGER (intr. by P. BAILEY). *Univ. of Illinois.* (Physiol.)

Cardiac depressant effect of CO_2 and its reversal. GABRIEL G. NAHAS AND N. MEAD CAVERT (intr. by J. E. RALL). *Univ. of Minnesota Med. School.* (Physiol.)

Regurgitation through normal mitral valves. M. J. OPPENHEIMER AND HERBERT M. STAUFFER.* *Temple Univ. School of Medicine and Hosp.* (Physiol.)

[1] Dr. Burnet is in this country as the Flexner Lecturer at Vanderbilt University. The Federation thanks that Institution for its cooperation.

INTERSOCIETY SESSIONS

Monday Afternoon, April 14, 1:30 p.m.

Atherosclerosis I: Human Studies

MON. P.M.—IRVINE AUDITORIUM

Chairman: Ancel Keys

1:30 **1.** Cholesterol levels of Canadian Eskimos. L. B. PETT AND P. J. LUPIEN.* *Dept. of Natl. Health and Welfare, Canada.* (Nutr.)

1:45 **2.** Serum cholesterol in Guatemalan children. JOSÉ MÉNDEZ,* NEVIN SCRIMSHAW, WERNER ASCOLI* AND BARRY SAVITS.* *Inst. of Nutrition of Central America and Panama, Guatemala.* (Physiol.)

2:00 **3.** Effect of unsaponifiable fraction of corn oil on serum cholesterol in man. FRANCISCO GRANDE, JOSEPH T. ANDERSON AND ANCEL KEYS. *Univ. of Minnesota and Hastings State Hosp.* (Physiol.)

2:15 **4.** Blood cholesterol in men consuming mixed diets of controlled fat content. RUTH LUTZ,* RICHARD H. BARNES AND EVA KWONG.* *Cornell Univ.* (Nutr.)

2:30 **5.** Dietary ascorbic acid and serum cholesterol. JOSEPH T. ANDERSON, FRANCISCO GRANDE* AND ANCEL KEYS.* *Univ. of Minnesota and Hastings State Hosp.* (Nutr.)

2:45 **6.** Influence of experimental design on assessment of the hypocholesterolemic activity of certain vegetable oils. J. M. R. BEVERIDGE, W. F. CONNELL,* G. A. MAYER* AND H. L. HAUST.* *Queen's Univ., Canada.* (Nutr.)

3:00 **7.** Comparison of aortic atherosclerosis in Cali, Colombia and New Orleans. HENRY C. MCGILL, JR., CARLOS RESTREPO* AND JACK P. STRONG.* *Louisiana State Univ. School of Medicine and Univ. del Valli, Cali.* (Pathol.)

3:15 **8.** Effects of pregnancy on heparin-induced lipemia clearing factor and serum lipids. H. C. MENG AND WILLIAM J. MCGANITY. *Vanderbilt Univ. School of Medicine.* (Physiol.)

3:30 **9.** Sodium polyethylene sulfonate (U-6812): effects on serum lipids and on blood coagulation. PETER T. KUO, F. THOMAS HOPKINS AND HAROLD WURZEL (intr. by HUGH MONTGOMERY). *Univ. of Pennsylvania.* (Physiol.)

Tuesday Morning, April 15, 9:00 a.m.

Radiation I

TUES. A.M.—PENN SHERWOOD, BALLROOM

Chairman: J. N. Stannard

9:00 **10.** Prompt effect of whole body radiation exposure in non-anesthetized rats. D. J. KIMELDORF AND E. L. HUNT.* *U. S. Naval Radiological Defense Lab.* (Physiol.)

9:15 **11.** Factors in the occurrence of tumors following beta radiation of the skin. A. K. DAVIS AND E. L. ALPEN. *U. S. Naval Radiological Defense Lab.* (Physiol.)

9:30 **12.** Radiation-induced residual injury in rat erythrocyte proliferation sites. SIEGMUND J. BAUM* AND E. L. ALPEN. *U. S. Naval Radiological Defense Lab.* (Physiol.)

9:45 **13.** Bone marrow, plasma and liver lipids following x-irradiation. E. E. ELKO AND N. R. DILUZIO (intr. by HORTENSE S. LOUCKES). *Univ. of Tennessee.* (Physiol.)

10:00 **14.** Soluble deoxypolynucleotides in bone marrow of x-irradiated rats. MARIE E. ELLIS AND LEONARD J. COLE (intr. by R. W. BRAUER). *U. S. Naval Radiological Defense Lab.* (Pharmacol.)

10:15 **15.** Non-nuclear antigenic stimuli for rat bone marrow heterograft rejection in x-irradiated mice. GEORGE W. SANTOS AND LEONARD J. COLE (intr. by A. R. BEHNKE). *U. S. Naval Radiological Defense Lab.* (Physiol.)

10:30 **15a.** Development of the recognition mechanism in antibody production. N. GENGOZIAN AND T. MAKINODAN (intr. by R. D. OWEN). *Oak Ridge Natl. Lab.* (Immunol.)

10:45 **16.** Influence of endocrine glands on radiation-induced hyperpigmentation in mice. WALTER C. QUEVEDO, JR.* AND DOUGLAS E. SMITH. *Argonne Natl. Lab.* (Physiol.)

11:00 **17.** Effect of x-radiation on synthesis and stability of DNA in various rat tissues. ODDVAR F. NYGAARD (intr. by J. P. CHANDLER). *Univ. of Michigan.* (Biochem.)

11:15 **18.** Biochemical changes in beta-irradiated epidermal tissue of guinea pigs. JOSEPH TABACHNICK* AND CHARLES WEISS. *Albert Einstein Med. Ctr.* (Pathol.)

11:30 **19.** Effect of x-irradiation on the glycogen content and histology of the rabbit retina. SIDNEY P. KENT. *Univ. of Alabama Med. Ctr.* (Pathol.)

11:45 **19a.** Analysis of homeostatic systems. HIRAM E. HART (intr. by ANNA GOLDFEDER). *Montefiore Hosp., New York City.* (Physiol.)

Atherosclerosis II: Pathology and General

TUES. A.M.—IRVINE AUDITORIUM

Chairman: F. R. Skelton

9:00 **20.** Production of ulcerated, hemorrhagic atherosclerotic plaques and dissecting aneurysm in the abdominal aorta of cockerels. R. PICK, J. STAMLER AND L. N. KATZ. *Michael Reese Hosp.* (Physiol.)

9:15 **21.** Functional significance of a mucopolysaccharide in artery wall. HERMAN T. BLUMENTHAL AND SHIN YEH YU.* *Jewish Hosp., St. Louis.* (Pathol.)

9:30 **22.** Structure and composition of aortic elastic tissue. GERTRUDE H. BLUMENTHAL* AND HERMAN T. BLUMENTHAL. *Jewish Hosp., St. Louis.* (Pathol.)

9:45 **23.** Synergism and antagonism of hypercholesteremia and hypervitaminosis D in experimental athero-arteriosclerosis. RICHARD E. TRUEHEART,* GEORGE M. HASS, ANN HEMMENS* AND MARJORIE COUNTS.* *Presbyterian-St. Luke's Hosp., Chicago.* (Pathol.)

10:00 **24.** Observations with electron microscope of arterial lesions in hypertensive rats. JACK C. GEER,* FLOYD R. SKELTON AND HENRY C. MCGILL, JR. *Louisiana State Univ.* (Pathol.)

10:15 **25.** Direct myocardial action of unsaturated fatty acids on other oxidizable substances. REINHARD H. BEUTNER. *Des Moines Still College.* (Physiol.)

10:30 **26.** Phospholipid synthesis in atheromatous lesions of normolipemic rabbits. ESTHER L. MCCANDLESS AND D. B. ZILVERSMIT. *Univ. of Tennessee.* (Physiol.)

10:45 **27.** Effect of biphenylylbutyric acid and Δ4-cholestenone on lipid metabolism in vivo. R. E. RANNEY AND SALLY E. WEISS.* *G. D. Searle & Co.* (Physiol.)

11:00 **28.** Inhibition of lipemia clearing activity by tissue components. EDMUND KLEIN, W. F. LEVER AND L. L. FEKETE (intr. by L. L. DIENES). *Harvard Med. School and Massachusetts Gen. Hosp.* (Immunol.)

11:15 **29.** Uptake and release of plasma unesterified fatty acids in the dog. JOHN J. SPITZER AND PAUL S. ROHEIM.* *Hahnemann Med. College.* (Physiol.)

11:30 **30.** Dietary fat and hypercholesteremia in the cebus monkey: poly-unsaturated fatty acids in sub-fractions of serum lipides. KAROLY PINTER,* O. W. PORTMAN* AND D. M. HEGSTED. *Harvard School of Public Health.* (Nutr.)

11:45 **31.** Influence of diet on fecal excretion of bile acids and beta hydroxysterols by rats. OSCAR W. PORTMAN AND P. MURPHY (intr. by F. J. STARE). *Harvard School of Public Health.* (Nutr.)

SYMPOSIUM: Neuropharmacology

TUES. A.M.—MUSEUM AUDITORIUM

Chairman: Hallowell Davis

9:00 **32.** Introduction. HALLOWELL DAVIS. *Central Inst. for the Deaf.*

9:15 **33.** An electrophysiological basis for neuropharmacology. HARRY GRUNDFEST. *Columbia Univ.*

9:45 **34.** Possible role of gamma-amino butyric acid as an inhibitor transmitter. KEITH F. KILLAM. *Univ. of California at Los Angeles.*

10:15 Discussion.

10:30 **35.** Analysis of the effects of psychopharmacological agents in behavioral terms. PETER B. DEWS. *Harvard Med. School.*

11:00 **36.** Animal experimental methods for the evaluation of drug effects upon behavior. JOSEPH V. BRADY. *Walter Reed Army Inst. of Research.*

11:30 Discussion.

Open House by Laboratories

See page 672 for complete schedule

Tuesday Afternoon, April 15, 1:30 p.m.

Radiation II

TUES. P.M.—PENN SHERWOOD, BALLROOM

Chairman: T. J. Haley

1:30 **37.** Effect of dietary protein on mortality of x-irradiated mice. W. T. BRADNER AND M. H. HATCH (intr. by D. A. CLARKE). *Sloan-Kettering Inst. and Brown Univ.* (Pharmacol.)

1:45 **38.** Behavior of radiation protective agent 2-aminoethylisothiuronium bromide hydrobromide in aqueous buffered solutions and human serum. BERNARD SHAPIRO (intr. by J. R. ELKINTON). *Albert Einstein Med. Ctr.* (Physiol.)

2:00 **39.** Metabolism of S,2-aminoethylisothiuronium. C. S. PRICKETT* AND P. K. SMITH. *George Washington Univ.* (Pharmacol.)

2:15 **40.** Effect of β-aminoethylisothiuronium (AET) on intermediary carbohydrate metabolism. GERALD R. ZINS* AND KENNETH P. DUBOIS. *Univ. of Chicago.* (Pharmacol.)

2:30 **41.** Protective effect of a colchicine derivative in irradiated mice. WILLIE W. SMITH, ILO M. ALDERMAN* AND RUTH E. GILLESPIE.* *Natl. Insts. of Health.* (Physiol.)

2:45 **42.** Transfer of donor immunological reactivity to x-irradiated F_1 hybrid mice by injection of parental bone marrow. LEONARD J. COLE, RICHARD M. GARVER* AND MARIE E. ELLIS.* *U. S. Naval Radiological Defense Lab.* (Physiol.)

3:00 **43.** Radioprotective effect of yeast autolysate. K. D. DETRE, S. C. FINCH AND C. H. CHANG (intr. by DANIEL L. KLINE). *Yale Univ. College of Medicine.* (Physiol.)

3:15 **44.** Effect of x-radiation on tissue antioxidants. ALBERT A. BARBER (intr. by KARL M. WILBUR). *Duke Univ.* (Physiol.)

3:30 **45.** Mechanism of "gastrointestinal radiation death". K. L. JACKSON* AND C. ENTENMAN. *U. S. Naval Radiological Defense Lab.* (Physiol.)

3:45 **46.** Survival of mouse-grown rat erythrocytes. L. H. SMITH AND J. TOHA (intr. by ALEXANDER HOLLAENDER). *Oak Ridge Natl. Lab.* (Physiol.)

4:00 **47.** Effect of nucleic acid digests in the restoration of hemolysin production in irradiated rabbits. B. N. JAROSLOW* AND W. H. TALIAFERRO (intr. by R. W. HARRISON). *Argonne Natl. Lab. and Univ. of Chicago.* (Immunol.)

4:15 **48.** Lymphatic tissue changes in lethally irradiated mice given spleen cells intravenously. C. C. CONGDON. *Oak Ridge Natl. Lab.* (Pathol.)

Atherosclerosis III: Experimental Dietary Effects

TUES. P.M.—IRVINE AUDITORIUM

Chairman: D. M. Hegsted

1:30 **49.** Dietary magnesium and thyroxine in progression and regression of vascular Sudanophilia. M. NAKAMURA,* J. J. VITALE,* E. E. HELLERSTEIN* AND D. M. HEGSTED. *Harvard School of Public Health and Med. School.* (Nutr.)

1:45 **50.** Interrelationships between dietary magnesium and calcium on atherogenesis and renal lesions. J. J. VITALE,* M. NAKAMURA,* E. E. HELLERSTEIN* AND D. M. HEGSTED. *Harvard School of Public Health and Med. School.* (Nutr.)

2:00 **51.** Effects of dietary protein, cholesterol, alpha-tocopherol and choline deficiency on rat coronary lipid deposition. ROBERT W. WISSLER, MARJORIE A. SCHROEDER,* MERLE S. MOSKOWITZ* AND RICHARD RASMUSSEN.* *Univ. of Chicago.* (Pathol.)

2:15 **52.** Purines and pyrimidines in experimental hypercholesteremia and atherogenesis. LOUIS C. FILLIOS,* C. NAITO* AND S. B. ANDRUS. *Harvard School of Public Health.* (Pathol.)

2:30 **53.** Effect of alcohol ingestion on atherogenesis. L. S. GOTTLIEB,* S. A. BROITMAN,* A. BEZMAN,* N. ZAMCHECK AND J. J. VITALE.* *Boston City Hosp. and Harvard School of Public Health.* (Pathol.)

2:45 **54.** Influence of six vegetable oils on aortic atheromatosis and plasma lipid concentrations in cholesterol-fed and estrogen-treated chickens. DAVID M. TENNENT,* MARY E. ZANETTI,* HENRY SIEGEL,* GUNTHER W. KURON* AND WALTHER H. OTT. *Merck Inst. for Therapeutic Research and Albert Einstein College of Medicine.* (Nutr.)

3:00 **55.** Effect of safflower oil plus sitosterol on cholesteremia and aortic Sudanophilia in rabbits. JONATHAN P. MILLER,* DOUGLAS V. FROST, ROBERT T OLSEN,* BRUCE A. CHRISTIANSON* AND G. FREDERICK LAMBERT.* *Abbott Labs.* (Nutr.)

3:15 **56.** Endogenous hypercholesterosis in rabbits fed a purified diet and effect of unsaturated lipid. E. R. Diller, B. L. Woods and O. A. Harvey (intr. by O. K. Behrens). *Lilly Research Labs.* (Biochem.)

3:30 **57.** Influence of total calories, fat calories and fat unsaturation on blood lipids. James J. Peifer* and Walter O. Lundberg. *Univ. of Minnesota.* (Biochem.)

3:45 **58.** Antihypercholesteremic effect of essential fatty acids in naturally occurring hypercholesteremic and nephrotoxic dogs. J. F. Herndon,* T. H. Lin,* Dorsey E. Holtkamp,* E. J. Van Loon* and Samuel M. Greenberg. *Smith, Kline & French Labs.* (Nutr.)

Neuropharmacology I

Tues. p.m.—Museum Auditorium

Chairman: L. S. Goodman

1:30 **59.** Pharmacological specification of electrogenic membranes in bullfrog CNS. Ernst Sigg and Harry Grundfest. *Columbia Univ.* (Physiol.)

1:45 **60.** Action of drugs on lobster cardiac ganglion. Donald M. Maynard (intr. by R. W. Gerard). *Univ. of Michigan.* (Physiol.)

2:00 **61.** Formation of γ-guanidinobutyric and guanidinoacetic acids in brain. John J. Pisano and Sidney Udenfriend. *Natl. Insts. of Health.* (Pharmacol.)

2:15 **62.** Cortical synaptic pathways analyzed with γ-aminobutyric acid (GABA). D. P. Purpura, M. Girado and H. Grundfest (intr. by P. F. A. Hoefer). *Columbia Univ.* (Physiol.)

2:30 **63.** Effect of addition and depletion of γ-aminobutyric acid upon electrocortical arousal. E. Eidelberg and S. Feldman (intr. by H. W. Magoun). *Univ. of California and VA Hosp., Long Beach.* (Physiol.)

2:45 **64.** Action of γ-aminobutyric acid (GABA) and strychnine upon evoked electrical responses of cerebral cortex. H. H. Jasper, S. Gonzalez* and K. A. C. Elliott. *McGill Univ.* (Physiol.)

3:00 **65.** Beta-phenylisopropylhydrazine, a monoamine oxidase inhibitor. Akira Horita (intr. by J. M. Dille). *Univ. of Washington.* (Pharmacol.)

3:15 **66.** Comparison of effects of lysergic acid diethylamide and bufotenine on performance of trained rats. Delmar J. Mahler,* Fred L. Humoller* and Arthur L. Dunn. *VA Hosp., Omaha.* (Physiol.)

3:30 **67.** Effects of lysergic acid diethylamide on certain aspects of memory (delayed alternation) in monkeys. Murray E. Jarvik and Stephan Chorover.* *Albert Einstein College of Medicine.* (Pharmacol.)

3:45 **68.** Conditioned avoidance response as influenced by fragments of the acetylcholine molecule. Elizabeth H. Jenney (intr. by C. C. Pfeiffer). *Emory Univ.* (Pharmacol.)

4:00 **69.** Central synaptic actions of certain B vitamins. H. Grundfest, D. P. Purpura and M. Girado (intr. by E. M. Papper). *Columbia Univ.* (Pharmacol.)

Registration Desks

Convention Hall, Monday–Friday (8 a.m.–5 p.m.)
Headquarters Hotels, Sunday (9 a.m.–9 p.m.); Monday (5–9 p.m.)

Exhibits—Inspection Periods

Monday through Thursday: 9 a.m. to 5 p.m.
Friday: 9 a.m. to 1 p.m

Wednesday Morning, April 16, 9:00 a.m.

Radiation III

WED. A.M.—PENN SHERWOOD, BALLROOM

Chairman: J. F. McClendon

9:00 **70.** Intestinal radiation syndrome in the partial-gut resected rat. S. TOM TAKETA* AND MARGUERITE N. SWIFT. *U. S. Naval Radiological Defense Lab.* (Physiol.)

9:15 **71.** DNA synthesis, cell duplication and migration in the small intestine of normal and irradiated mice. F. G. SHERMAN, G. BRECHER, E. P. CRONKITE AND H. QUASTLER.* *Brown Univ., Natl. Insts. of Health and Brookhaven Natl. Lab.* (Physiol.)

9:30 **72.** Lens opacities in mice exposed to chronic gamma and fast neutron irradiation. J. F. NOBLE,* A. T. HASEGAWA,* H. D. LANDAHL* AND J. DOULL. *Univ. of Chicago.* (Pharmacol.)

9:45 **73.** Change in activity of nerves during x-irradiation. JAMES R. LOTT (intr. by J. H. U. BROWN). *Emory Univ.* (Physiol.)

10:00 **74.** Sludged blood in x-irradiated and fat-fed rats. J. F. MCCLENDON AND J. GERSHON-COHEN*. *Albert Einstein Med. Ctr.* (Physiol.)

10:15 **75.** Muscle fatigue in x-irradiated rats. THOMAS J. HALEY, A. M. FLESHER* AND N. KOMESU.* *Univ. of California.* (Pharmacol.)

10:30 **76.** Effect of dose and postirradiation interval for threshold of radiation edema locally produced in the rat forelimb. C. W. SHEPPARD AND E. B. DARDEN, JR.* *Univ. of Tennessee and Oak Ridge Natl. Lab.* (Physiol.)

10:45 **77.** Comparative effects of beta irradiation on rabbit, sheep and swine skin. L. A GEORGE, JR., AND L. K. BUSTAD (intr. by A. EDELMANN). *Hanford Labs.* (Physiol.)

11:00 **78.** Variability of physiological and histological response of mouse thyroid to radioiodine. DAVID L. JOFFES (intr. by SHIELDS WARREN). *New England Deaconess Hosp., Boston.* (Pathol.)

11:15 **79.** Injury and recovery patterns in the whole body irradiated dog. SOL M. MICHAELSON,* JOE W. HOWLAND AND HENRY A. BLAIR. *Univ. of Rochester.* (Pathol.)

11:30 **80.** Cardiovascular changes following partial-body x-irradiation. W. O. CASTER AND W. D. ARMSTRONG. *Univ. of Minnesota.* (Biochem.)

11:45 **81.** Fibrinogen alterations in rabbits following x-radiation and endotoxin. W. SCHRADER,* B. JARVIS* AND J. BRUNSON. *Univ. of Minnesota.* (Pathol.)

Tumors I. Carcinogens and Metabolism

WED. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: Harold L. Stewart

9:00 **82.** State of beryllium in blood plasma. ANDREW L. REEVES,* RALPH G. SMITH* AND ARTHUR J. VORWALD. *Wayne State Univ. College of Medicine.* (Pathol.)

9:15 **83.** Chemical and biological studies on bis-(iodoethyl)-deuteroporphyrin. KURT I. ALTMAN* AND KURT SALOMON. *Univ. of Rochester School of Medicine.* (Biochem.)

9:30 **84.** Influence of trauma on carcinogenic effects of methylcholanthrene. GARTH RUSSELL,* A. A. WERDER AND C. A. HARDIN.* *Univ. of Kansas Med. Ctr.* (Pathol.)

9:45 **85.** Removal of 3,4-benzpyrene from soot by proteins. PAUL KOTIN, HANS FALK* AND ADELE MILLER.* *Univ. of Southern California School of Medicine.* (Pathol.)

10:00 **86.** Rate-limiting factors in protein labeling by tumor slices. JOSEPH R. DAVIS* AND HARRIS BUSCH. *Univ. of Illinois College of Medicine.* (Pharmacol.)

10:15 **87.** Effect of borneol amine derivatives of nitrogen mustard on tumor bearing mice. GEORGE T. OKITA, FLORENCE RICHARDSON* AND GEORGE V. LEROY.* *Argonne Cancer Research Hosp. and Univ. of Chicago.* (Pharmacol.)

10:30 **88.** Effect of 4-aminopyrazolo (3,4-d) pyrimidine on metabolism of yeast (Candida sp.). RICHARD S. YOUNG AND MARY JO BURR (intr. by E. P. LAUG). *Food and Drug Admin.* (Pharmacol.)

10:45 **89.** Some alkylating compounds in chemotherapy of transplanted rat tumors. C. G. BLY, C. MCCRARY* AND S. GRISOLIA. *Univ. of Rochester School of Medicine and Univ. of Kansas Med. Ctr.* (Pathol.)

11:00 **90.** A purine-6-thioglucosidase in normal and malignant tissues. IRVING GOODMAN, JAMES R. FOUTS AND GEORGE H. HITCHINGS. *Wellcome Research Labs.* (Biochem.)

11:15 **91.** Differential effect of 3-amino-1,2,4-triazole on the catalase of erythrocytes and of liver. ROBERT N. FEINSTEIN. *Argonne Natl. Lab.* (Biochem.)

11:30 **92.** Erythrocytes of tumor-bearing animals. W. R. STERLING,* R. E. GREENFIELD* AND V. E. PRICE. *Natl. Cancer Inst.* (Biochem.)

11:45 **93.** Hemoglobin reaction with serum from normal and tumor-bearing rats. ERIC L NELSON AND J. E. PETIK.* *Univ. of California School of Medicine.* (Pathol.)

12:00 **94.** Excretion of acid mucopolysaccharides in urine of patients with malignant neoplastic diseases. CLAYTON RICH AND W. P. L. MYERS (intr. by R. M. ARCHIBALD). *Rockefeller and Sloan-Kettering Insts.* (Biochem.)

SYMPOSIUM: Cultivation and Use of Animal and Plant Cells

WED. A.M.—IRVINE AUDITORIUM

Chairman: Wendell M. Stanley

9:00 **95.** Chairman's introductory remark. WENDELL M. STANLEY. *Univ. of California.*

9:10 **96.** Long-term cultivation of animal tissue cells in large cultures. WILTON R. EARLE. *Natl. Cancer Inst.*

9:55 **97.** Cinematographic analysis of cell dynamics. C. M. POMERAT. *Univ. of Texas Med. Branch.*

10:40 **98.** Amino acid metabolism in human cell cultures. HARRY EAGLE. *Natl. Inst. of Allergy and Infectious Diseases.*

11:25 **99.** Clonal growth of mammalian cells. THEODORE T. PUCK. *Univ. of Colorado Med. Ctr.*

(Symposium continues Wednesday Afternoon)

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Placement Service

Center Building, Convention Hall

Headquarters Hotels

Benjamin Franklin: Pharmacology and Physiology
Sheraton: Biochemistry and Nutrition
Bellevue-Stratford: Pathology and Immunology

Wednesday Afternoon, April 16, 1:30 p.m.

Radiation IV

WED. P.M.—PENN SHERWOOD, BALLROOM

Chairman: Herman I. Chinn

1:30 **100.** Urinary and gastrointestinal excretion of calcium and strontium in man. JOSEPH SAMACHSON, HERTA SPENCER AND DANIEL LASZLO (intr. by JULIAN B. HERRMANN). *Montefiore Hosp., New York.* (Pharmacol.)

1:45 **101.** Tissue soluble filaments containing radioyttrium (Y-90). JOSEPH GREENBERG AND H. C. DUDLEY.* *Long Island Jewish Hosp., New York.* (Physiol.)

2:00 **102.** Morphology of transplanted cartilage. RICHARD L. SWARM, WILLIAM E. SCHATTEN, DELBERT M. BERGENSTAL, SIDNEY SIEGEL, ELIZA MILLER AND HERMAN MICHELITCH (intr. by THELMA B. DUNN). *Natl. Insts. of Health.* (Pathol.)

2:15 **103.** Increase in trabecular bone concentration in dog vertebrae as induced by x-irradiation. J. S. ARNOLD, J. K. GONG* AND S. H. COHN.* *U. S. Naval Radiological Defense Lab.* (Pathol.)

2:30 **104.** Effects of whole body irradiation on accretion and exchange of radiostrontium in the skeleton of dogs. S. H. COHN,* W. L. MILNE,* J. K. GONG* AND J. S. ARNOLD. *U. S. Naval Radiological Defense Lab.* (Pathol.)

2:45 **105.** Reconstitution of hemopoietic tissue from intravenous bone marrow following chronic administration of thio-TEPA, a "radiomimetic" agent. ARTHUR KIRSCHBAUM AND NYLENE E. ECKLES.* *Baylor Univ. and Univ. of Texas.* (Pathol.)

3:00 **106.** An entity resembling homologous disease induced by transplantation of lymphoid tissue in unirradiated mice. JOHN J. TRENTIN (intr. by A. KIRSCHBAUM). *Baylor Univ. College of Medicine.* (Pathol.)

3:15 **107.** Inhibition of normal serum bactericidal activity by nitrogen mustard. DAVID M. DONALDSON AND MORGAN L. MILLER.* *Brigham Young Univ.* (Immunol.)

3:30 **108.** Bone marrow cell separation. J. W. GOODMAN (intr. by C. C. CONGDON). *Oak Ridge Natl. Lab.* (Pathol.)

3:45 **109.** Electrophoresis of proteins of irradiated mouse chimeras. RAYMOND A. POPP AND L. H. SMITH (intr. by A. C. UPTON). *Oak Ridge Natl. Lab.* (Pathol.)

4:00 **110.** Changes in irradiated F_1 hybrid mice injected with parental spleen cells. G. E. COSGROVE, JR.,* E. E. SCHWARTZ,* A. C. UPTON and C. C. CONGDON. *Oak Ridge Natl. Lab.* (Pathol.)

4:15 **111.** Inhibition by splenectomy of development of radiation-induced myeloid leukemia. ARTHUR C. UPTON AND FRANCES F. WOLFF.* *Oak Ridge Natl. Lab.* (Pathol.)

Tumors II. Lymphomas and Related Tumors

WED. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: A. E. Casey

1:30 **112.** Culture of neoplastic mast cells and their 5-hydroxytryptamine- and histamine-content in vitro. R. SCHINDLER, S. M. DAY AND G. A. FISCHER (intr. by A. D. WELCH). *Yale Univ. School of Medicine.* (Pharmacol.)

1:45 **113.** Tissue culture studies on lymphomas with particular reference to Hodgkin's disease. WARREN L. BOSTICK, MARTHE E. SMITH* AND BENJAMIN V. SIEGEL.* *Univ. of California School of Medicine.* (Pathol.)

2:00 **114.** Isolation of P-1534 mouse leukemia in tissue culture. G. E. FOLEY, B. P. DROLET,* R. E. MCCARTHY* AND H. D. RILEY.* *Children's Cancer Research Fndn. and Harvard Med. School.* (Pathol.)

2:15 **115.** Malignancy and transplantability of mouse lymphoid leukemia cells, as reflected on their chromosome complements. SUSUMU OHNO* AND R. KINOSITA. *City of Hope Med. Ctr.* (Pathol.)

2:30 **116.** Growth behavior of three ascites lymphomas and their associated non-tumor cells. EMMA SHELTON AND MARY E. RICE.* *Natl. Cancer Inst.* (Pathol.)

2:45 **117.** Cytolysis of Ehrlich ascites tumor cells by rabbit antiserum. ANTON LINDNER (intr. by JOSEPH J. LALICH). *Univ. of Wisconsin.* (Pathol.)

3:00 **118.** Serum factors in tumor inhibition. ROBERT BERMAN,* C. G. BLY AND ALVAR WERDER. *Univ. of Kansas Med. Ctr.* (Pathol.)

3:15 **119.** Pre-iodination purification of in vitro localizing rat anti-Murphy-Sturm lymphosarcoma antibody. IRVING L. SPAR,* RUTH L. GOODLAND* AND WILLIAM F. BALE. *Univ. of Rochester School of Medicine.* (Physiol.)

3:30 **120.** In vivo and in vitro action of guinea pig serum on Murphy-Sturm lymphosarcoma. HERMAN AINIS, ELOISE JAMESON AND PHILIP KRAMER (intr. by JUSTINE GARVEY). *Univ. of Southern California.* (Immunol.)

3:45 **121.** Isografts of spontaneous tumors into BALB/c mice pretreated with autologous and isologous tumor tissue. ALBERT E. CASEY, JOANNE G. CASEY* AND CLAIRE B. WIMBERLEY.* *Univ. of Alabama Med. Ctr.* (Pathol.)

4:00 **122.** Tissue autosensitivity in animals: antitumoral autodefenses in man and their possible therapeutic effect. JAMES W. FINNEY,* DALE A. CLARK,* RUSSELL H. WILSON* AND ORVILLE WYSS. *Univ. of Texas and McKinney VA Hosp.* (Biochem.)

4:15 **123.** Influence of edathamil in vitro on protein SH, acid soluble SH and acid soluble SS of Ehrlich ascites cells. JOSEPH DIPAOLO AND THOMAS NIEDBALA (intr. by W. K. NOELL). *Roswell Park Memorial Inst.* (Physiol.)

SYMPOSIUM: Cultivation and Use of Animal and Plant Cells

WED. P.M.—IRVINE AUDITORIUM

Chairman: Wendell M. Stanley

1:30 **124.** Viruses and single cell clones in plant tissue culture. A. C. HILDEBRANDT AND A. J. RIKER. *Univ. of Wisconsin.*

2:15 **125.** Notes on susceptibility and resistance of animal cells to mammalian viruses. JOHN F. ENDERS. *Children's Hosp., Boston.*

3:00 **126.** Fine structure of tissue culture cells. R. C. WILLIAMS AND FRANCES L. KALLMAN. *Univ. of California.*

3:45 **127.** Infection by the Rous sarcoma virus in vitro. HARRY RUBIN. *California Inst. of Technology.*

General Neuropharmacology II

WED. P.M.—CONVENTION HALL, ROOM F

Chairman: I. H. Slater

1:30 **128.** Comparison of the influence of antiepileptics on the cerebral synaptic action of gamma-aminobutyric acid. E. ROSS HART AND AMEDEO S. MARRAZZI. *VA Research Labs. in Neuropsychiatry, Pittsburgh.* (Pharmacol.)

1:45 **129.** Relation of brain excitability to brain γ-aminobutyric acid concentration. DIXON M. WOODBURY AND ANTONIA VERNADAKIS.* *Univ. of Utah College of Medicine* (Pharmacol.)

2:00 **130.** Unified concept of interaction of psychotropic agents with neurohormones. B. B. BRODIE AND P. A. SHORE. *Natl. Heart Inst.* (Pharmacol.)

2:15 **131.** Inhibition of reserpine tranquilizing effects by tetrabenazine, a synthetic tranquilizing agent. G. P. QUINN,* P. A. SHORE AND B. B. BRODIE. *Natl. Heart Inst.* (Pharmacol.)

2:30 **132.** Metabolism of lysergic acid diethylamide. E. S. BOYD (intr. by E. A. MAYNARD). *Univ. of Rochester School of Medicine.* (Pharmacol.)

2:45 **133.** Effect of serum from schizophrenic patients on neurohumors in rabbit brain. E. J. WALASZEK,* C. M. SMITH* AND BRUNO MINZ. *Kansas Univ. School of Medicine and Osawatomie State Hosp.* (Pharmacol.)

3:00 **134.** Adrenaline and nor-adrenaline in the urine and plasma of schizophrenics. BERNARD HOLLAND, GERALD COHEN, MARCEL GOLDENBERG, JOANNE SHA AND LEON LEIFER (intr. by M. JACK FRUMIN). *Columbia Univ.* (Pharmacol.)

3:15 **135.** A method for determination of phenothiazines in urine. SAMUEL EIDUSON AND RAYMOND D. WALLACE (intr. by W. G. CLARK). *VA Neuropsychiatric Hosp., Los Angeles and Univ. of California, School of Medicine* (Pharmacol.)

3:30 **136.** Antagonism of cyanide intoxication by chlorpromazine. PAUL S. GUTH* AND MORRIS A. SPIRTES. *Hahnemann Med. College.* (Pharmacol.)

3:45 **137.** Anti-emetic action of intravenous glycine and Krebs acids in dogs. RUDOLF KOSTER. *Wellcome Research Labs.* (Pharmacol.)

4:00 **138.** Histologic demonstration of release of nor-epinephrine from adrenal medulla by deserpidine. RUVEN GREENBERG AND JAMES E. P. TOMAN. *Univ. of Illinois Med. School and Chicago Med. School.* (Physiol.)

4:15 **139.** Action of electrolytes and drugs on protease activity and -SH groups of rat brain. G. UNGAR AND D. V. ROMANO.* *U. S. Vitamin Corp.* (Physiol.)

Thursday Morning, April 17, 9:00 a.m.

Tumors III. Tumor and Host Interaction

THURS. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: Frank J. Dixon, Jr.

9:00 **140.** Effects on host of growth of mouse sarcoma 180. DONALD A. CLARKE, BARBARA WEISS TIRSCHWELL,* JOAN FRIEDMAN* AND FRANCISCO R. MORALES.* *Sloan-Kettering Inst.* (Pharmacol.)

9:15 **141.** Water and lipid shifts in pregnancy. HAROLD E. W. BINHAMMER* AND ELDON M. BOYD. *Queen's Univ., Canada.* (Pharmacol.)

9:30 **142.** Growth promoting activity of liver preparation and other tissue preparation. K. E. PASCHKIS, A. CANTAROW, J. J. GODDARD* AND J. ZAGERMAN.* *Jefferson Med. College.* (Physiol.)

9:45 **143.** Effects of thyroxine and thiouracil on growth and regression of skin papillomas in mice previously induced by chemical carcinogens. JOSEPH MEITES. *Michigan State Univ.* (Physiol.)

10:00 **144.** Morphogenesis of testicular teratomas in mice. G. BARRY PIERCE* AND FRANK J. DIXON. *Univ. of Pittsburgh.* (Pathol.)

10:15 **145.** Tissue cultures from human adult bronchial epithelium. CORNELIA HOCH-LIGETI AND JOYCE P. HOBBS.* *Univ. of Virginia.* (Pathol.)

10:30 **146.** Pulmonary tumors developing from intratracheal instillation of tumor cells. TOM D. NORMAN. *Univ. of Mississippi Med. Ctr.* (Pathol.)

10:45 **147.** Protein metabolism in degenerating and regenerating pancreas. P. J. FITZGERALD. *State Univ. of New York, Downstate Med. Ctr.* (Pathol.)

11:00 **148.** ACTH assay with functional adrenocortical tumor slices. ARTHUR I. COHEN (intr. by JACOB FURTH). *Children's Cancer Research Fndn. and Harvard Med. School.* (Pathol.)

11:15 **149.** Radiothyroidectomy in the parakeet. HANS G. SCHLUMBERGER. *Univ. of Arkansas Med. School.* (Pathol.)

11:30 **150.** A chemical difference in sarcomas (S 37) as compared with Barrett carcinoma. M. X. SULLIVAN AND JOHN E. FOLK.* *Georgetown Univ. and Natl. Insts. of Health.* (Biochem.)

11:45 **151.** Selective implantation into liver of intraperitoneally growing adenocarcinoma. HORACE GOLDIE, MATTHEW WALKER,* BERTRAND TYSON,* ODELL DEAN* AND RUDOLPH MORAGNE.* *Meharry Med. College.* (Immunol.)

Blood Clotting I

THURS. A.M.—PENN SHERWOOD, BALLROOM

Chairman: Armand J. Quick

9:00 **152.** Hemorrhage in massive transfusion. S. GOLLUB, A. W. ULIN, H. S. WINCHELL AND E. EHRLICH (intr. by C. RIEGAL). *Hahnemann Hosp.* (Biochem.)

9:15 **153.** Relation of bleeding time to coagulation of blood. ARMAND J. QUICK AND CLARA V. HUSSEY.* *Marquette Univ.* (Biochem.)

9:30 **154.** Detection of circulating anticoagulants. ALVIN MARGOLIUS, JR.,* DUDLEY P. JACKSON AND C. LOCKARD CONLEY.* *Johns Hopkins Univ.* (Physiol.)

9:45 **155.** Anticoagulant effect of incubated fibrinogen. D. C. TRIANTAPHYLLOPOULOS (intr. by A. W. DOWNS). *Univ. of Alberta, Canada.* (Physiol.)

10:00 **156.** Correction of defects in EDTA blood by magnesium and other divalent cations. MARJORIE B. ZUCKER AND JENNIE BORRELLI.* *Sloan-Kettering Inst.* (Physiol.)

10:15 **157.** Correction of vascular fragility by a water-soluble platelet fraction in patients with secondary thrombocytopenia. ISAAC DJERASSI,* EDMUND KLEIN,* SIDNEY FARBER AND GISELLE PECHET.* *Children's Med. Ctr. and Harvard Med. School.* (Pathol.)

10:30 **158.** Response of dogs to injected tissue extracts. GEORGE D. PENICK, HAROLD P. ROBERTS* AND WILLIAM P. WEBSTER.* *Univ. of North Carolina.* (Pathol.)

10:45 **159.** Effect of serum on blood platelets. H. C. PIRKLE AND H. C. ANDERSON (intr. by R. W. WISSLER). *Univ. of Louisville School of Medicine.* (Pathol.)

11:00 **160.** Correlation of ultrastructural platelet abnormalities with platelet factor 3 defects. J. M. RIDDLE* and J. W. REBUCK. *Henry Ford Hosp.* (Pathol.)

11:15 **161.** Platelet-antihemophilic factor in-

teractions. DOUGLAS M. SURGENOR AND BARBARA B. STEELE.* *Harvard Med. School and Protein Fndn.* (Biochem.)

11:30 **162.** Nature of serum thromboplastic defect in patients with liver disease. S. F. RABINER AND I. SCHULMAN (intr. by P. REZNIKOFF). *New York Hosp.-Cornell Univ. Med. College.* (Physiol.)

11:45 **163.** New approach to thrombocytopathies (Thrombocytopathy A). R. W. MONTO (intr. by P. R. DUMKE). *Henry Ford Hosp.* (Pharmacol.)

Visible Index and Message Center

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Press Room

Room 304, Convention Hall

Federation Office

Room 305, Convention Hall
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Thursday Afternoon, April 17, 1:30 p.m.

Tumors IV. Metabolic Aspects

THURS. P.M.—COMMERCIAL MUSEUM BLDG. ROOM Y

Chairman: E. Racker

1:30 **164.** Glycogen metabolism of ascites tumor cells. MARSHALL W. NIRENBERG (intr. by I. G. LEDER). *Natl. Inst. of Arthritis and Metabolic Diseases.* (Biochem.)

1:45 **165.** Metabolism of glucose and alterations in nucleotides by Ehrlich ascites carcinoma cells. ELMON COE,* KENNETH IBSEN* AND RALPH MCKEE. *Univ. of California.* (Biochem.)

2:00 **166.** Crabtree effect in ascites cells. GEORGE MIROFF* AND WILLIAM E. CORNATZER. *Univ. of North Dakota Med. School.* (Biochem.)

2:15 **167.** Oxidative phosphorylation in transplanted Novikoff hepatoma of the rat. THOMAS M. DEVLIN AND MYRON P. PRUSS (intr. by GEORGE E. BOXER). *Merck Inst. for Therapeutic Research.* (Biochem.)

2:30 **168.** Tricarboxylic acid cycle in tumor tissue. RASHID M. DAJANI* AND JAMES M. ORTEN. *Wayne State Univ. College of Medicine.* (Nutr.)

2:45 **169.** Leakage of enzymes from ascites tumor cells. RAY WU* AND E. RACKER. *Public Health Research Inst. of the City of New York.* (Biochem.)

3:00 **170.** 6-Aminonicotinamide antagonism of pyridine nucleotide metabolism: effect on acid soluble nucleotides of tumor tissue. IRA M. FRIEDLAND,* LEATRICE A. KAPLAN,* L. S. DEITRICH AND DANIEL M. SHAPIRO.* *Columbia Univ.* (Biochem.)

3:15 **171.** P^{32} incorporation by Ehrlich ascites carcinoma cells. E. H. CREASER, R. P. DE LEON AND P. G. SCHOLEFIELD (intr. by D. L. THOMSON). *McGill-Montreal Gen. Hosp. Research Inst.* (Biochem.)

3:30 **172.** Breakdown of nucleotides by homogenates of the Flexner-Jobling carcinoma. PAUL J. FODOR, P. TOMASHEFSKY* AND C. FUNK. *New York Med. College and Funk Fndn. for Med. Research.* (Biochem.)

3:45 **173.** Inhibition of acid precipitation of DNA and ovalbumin nucleate formation by a human leukemic urine fraction. HERBERT WEINFELD AND MARVIN TUNIS (intr. by CHRISTOPHER CARRUTHERS). *Roswell Park Memorial Inst.* (Biochem.)

4:00 **174.** Acid soluble tissue deoxynucleotides. WALTER C. SCHNEIDER AND JEAN ROTHERHAM.* *Natl. Cancer Inst.* (Biochem.)

4:15 **175.** Polyphosphate nucleotides of purine analogs. JAMES L. WAY, J. M. DAHL* AND R. E. PARKS, JR. *Univ. of Wisconsin Med. School.* (Pharmacol.)

4:30 **176.** Demonstration of a urinary metabolite of beta naphthylamine conjugated with phosphoric acid. WALTER TROLL AND NORTON NELSON. *New York Univ.* (Biochem.)

Blood Clotting II

THURS. P.M.—PENN SHERWOOD, BALLROOM

Chairman: L. M. Tocantins

1:30 **177.** Action of protamine on thromboplastin generation. JACOB N. SHANBERGE (intr. by D. G. MCKAY). *Harvard Med. School.* (Pathol.)

1:45 **178.** Effect of intravenous blood thromboplastin derivatives on clotting in rats. THEODORE H. SPAET AND MONA L. KROPATKIN.* *Montefiore Hosp., New York City.* (Physiol.)

2:00 **179.** Thromboplastin generation test in prothromboplastic and co-thromboplastic deficiencies. CHARLES A. OWEN, JR. AND MARGARET M. HURN.* *Mayo Clinic and Fndn.* (Pathol.)

2:15 **180.** Platelet factor 3 in blood coagulation. SHIRLEY A. JOHNSON AND DANIEL H. BASINSKI.* *Henry Ford Hosp.* (Physiol.)

2:30 **181.** Sterilization of platelet factor 3 with beta-propiolactone and ultraviolet irradiation. G. A. LO GRIPPO. *Henry Ford Hosp.* (Immunol.)

2:45 **182.** Coagulation defect of platelet-poor, lipid-free plasma: its correction by tissue phospholipids. FRANCO GOBBI* AND MARIO STEFANINI. *St. Elizabeth Hosp. and Tufts Univ.* (Pathol.)

3:00 **183.** Phospholipid antithromboplastin. D. L. TURNER,* M. J. SILVER* AND L. M. TOCANTINS. *Jefferson Med. College.* (Physiol.)

3:15 **184.** Phospholipid antithromboplastin: studies on mechanism of action. R. R. HOLBURN, M. J. SILVER, D. L. TURNER AND L. M. TOCANTINS (intr. by L. A. KAZAL). *Jefferson Med. College.* (Biochem.)

3:30 **185.** Biochemicals basis of thromboplastinase action. DONN J. KUSHNER AND DONALD FELDMAN (intr. by J. H. QUASTEL). *Forest Insect Lab., Canada and VA Hosp., East Orange, N. J.* (Biochem.)

3:45 **186.** Purification and identification of brain phospholipids associated with thromboplastic activity. DONALD G. THERRIAULT AND THOMAS NICHOLS (intr. by W. F. KOCHOLATY). *U. S. Army Med. Research Lab., Fort Knox.* (Biochem.)

4:00 **187.** Anticoagulant properties of o-phosphoethanolamine and o-phosphoserine. J. L. KOPPEL, DOROTHY MUELLER, LILLIAN V. NOVAK AND JOHN H. OLWIN (intr. by DOUGLAS A. MACFADYEN). *Presbyterian-St. Luke's Hosp., Chicago.* (Biochem.)

4:15 **188.** Egg-containing meals and blood coagulability. DOUGLAS N. RHODES,* ESKO ORMA* AND ANCEL KEYS. *Univ. of Minnesota.* (Physiol.)

General Neuropharmacology III

THURS. P.M.—CONVENTION HALL, ROOM F

Chairman: Jurg A. Schneider

1:30 **189.** Release of serotonin by extracts of mammalian tissues. NICHOLAS J. GIARMAN AND LINCOLN T. POTTER*. *Yale Univ.* (Pharmacol.)

1:45 **190.** Combined technique for determining magnitude and rate of change of drug effects on CO_2 sensitivity and CO_2 "threshold", with particular reference to meprobamate. S. J. G. SEMPLE,* J. P. FIDLER* AND C. J. LAMBERTSEN. *Univ. of Pennsylvania.* (Pharmacol.)

2:00 **191.** Some effects of Atarax on excitable tissues. S. NISHI, K. KOKETSU, J. A. CERF AND L. G. ABOOD (intr. by T. R. SHERROD). *Univ. of Illinois.* (Pharmacol.)

2:15 **192.** Electroretinographic effects of LSD-25, Brom-LSD and LSM (lysergic acid morpholide). H. M. BURIAN,* W. J. FLEMING* AND R. M. FEATHERSTONE. *State Univ. of Iowa.* (Pharmacol.)

2:30 **193.** Effect of LSD on inhibitory systems in the spinal cord. VICTOR DISTEFANO AND DANIEL E. LEARY (intr. by E. A. MAYNARD). *Univ. of Rochester.* (Pharmacol.)

2:45 **194.** Atropine and d-amphetamine in rabbits with midbrain lesions. RICHARD P. WHITE AND ERNEST A. DAIGNEAULT (intr. by ROBERT A. WOODBURY). *Univ. of Tennessee.* (Pharmacol.)

3:00 **195.** Inhibition of spinal reflexes by 2-amino-5-chlorobenzoxazole (zoxazolamine). L. E. GEIGER, P. CERVONI AND J. BERTINO (intr. by K. K. KIMURA). *U. S. Army Chemical Warfare Labs.* (Pharmacol.)

3:15 **196.** Effect of meprobamate and phenaglycodol on spontaneous and evoked brain activity in the cat. HANNS GANGLOFF (intr. by EVA KING KILLAM). *Univ. of California.* (Pharmacol.)

3:30 **197.** Effects of drugs on resting and activated EEG of cat. ALFRED KUEHN* AND WILLIAM SCHALLEK. *Hoffmann-LaRoche.* (Pharmacol.)

3:45 **198.** Interactions between epinephrine and psychotomimetic drugs on cat nictitating membrane (NM). E. COSTA AND G. ZETLER (intr. by H. E. HIMWICH). *State Research Hosp., Galesburg, Ill.* (Pharmacol.)

4:00 **199.** Non-specific depressant effect of 5-hydroxytryptamine on the guinea-pig ileum. JOHN C. SZERB (intr. by C. B. WELD) *Dalhousie Univ., Canada.* (Physiol.)

4:15 **200.** Hemoglobin reaction with serotonin and related 5-hydroxyindoles. NAN-SING LING* AND J. J. BLUM. *Univ. of Michigan.* (Physiol.)

Atherosclerosis IV: Factors Affecting Cholesterol Levels

THURS. P.M.—IRVINE AUDITORIUM

Chairman: Olaf Mickelsen

1:30 **201.** Effect of dietary cholesterol on polyunsaturated fatty acid composition of rat plasma and liver cholesterol esters. PETER D. KLEIN (intr. by ROBERT W. SWICK). *Argonne Natl. Lab.* (Biochem.)

1:45 **202.** Thyroidectomy, vitamin D and hypercholesteremia in rats. CHENG-CHUN LEE AND ROY G. HERRMANN. *Lilly Research Labs.* (Pharmacol.)

2:00 **203.** Effects of β-sitosterol and cholic acid on mobilization of mouse liver cholesterol. WILLIAM L. ANTHONY* AND WILLIAM T. BEHER. *Edsel B. Ford Inst. for Med. Research.* (Biochem.)

2:15 **204.** Effect of bile salts and β-sitosterol on cholesterol metabolism in essential fatty acid-deficient rats. ARTHUR F. WELLS* AND ROSLYN B. ALFIN-SLATER. *Univ. of Southern California.* (Biochem.)

2:30 **205.** Mixed soybean sterols and cholesterol metabolism. DAVID C. HERTING* AND PHILIP L. HARRIS. *Distillation Products Ind. Div., Eastman Kodak Co.* (Nutr.)

2:45 **206.** Influence of adrenal corticoids on cholesterol accumulation in the rat. DONALD V. TAPPAN (intr. by C. A. ELVEHJEM). *Univ. of Maine.* (Biochem.)

3:00 **207.** Influence of endocrines on tissue cholesterol in rats. ROY G. HERRMANN AND CHENG-CHUN LEE. *Lilly Research Labs.* (Pharmacol.)

3:15 **208.** Effect of exercise and androgen in cholesterol-fed pullets. HARRY Y. C. WONG, FRANK B. JOHNSON* AND ABBIE K. WONG.* *Howard Univ. and Armed Forces Inst. of Pathology.* (Physiol.)

3:30 **209.** Dietary factors other than fat which influence plasma cholesterol level in the chicken. DEWEY JOHNSON, JR. AND HANS FISHER (intr. by M. W. TAYLOR). *Rutgers Univ.* (Nutr.)

3:45 **210.** Action of casein, egg albumin and corn germ on cholesterolemia and atherogenesis in cockerels. J. STAMLER, R. PICK AND L. N. KATZ. *Michael Reese Hosp.* (Physiol.)

Lost and Found

Federation Office, Room 305, Convention Hall

Films of Interest to Pathologists

See page 644 for schedule

Friday Morning, April 18, 9:00 a.m.

Blood Clotting III

FRI. A.M.—PENN SHERWOOD, BALLROOM

Chairman: Benjamin Alexander

9:00 **211.** Conversion of prothrombin to thrombin by proteolytic enzymes. BENJAMIN ALEXANDER AND LIBERTO PECHET.* *Beth Israel Hosp. and Harvard Univ.* (Biochem.)

9:15 **212.** Role of plasma accelerator-globulin and its thrombin activated form, serum accelerator-globulin, in conversion of prothrombin. BETTY R. JOHNSTON* AND H. JENSEN. *U. S. Army Med. Research Lab., Fort Knox.* (Biochem.)

9:30 **213.** Enzyme-induced copolymerization of proteins. L. LORAND AND ANN JACOBSEN.* *Northwestern Univ.* (Biochem.)

9:45 **214.** Preparation and activation of prothrombin. KENT D. MILLER (intr. by RAY K. BROWN). *New York State Dept. of Health.* (Biochem.)

10:00 **215.** Inactivation and regeneration of prothrombin activity with cathepsin B. MARION I. BARNHART (intr. by ERNEST D. GARDNER). *Wayne State Univ.* (Physiol.)

10:15 **216.** Coagulation proteins following continuous flow curtain electrophoresis. JESSICA H. LEWIS AND WILLIAM MERCHANT.* *Univ. of Pittsburgh.* (Physiol.)

10:30 **217.** Purification of coagulation proteins by continuous flow paper electrophoresis. RODNEY P. DUNAWAY, CATHERINE C. ASHLEY AND PAUL W. BOYLES (intr. by JOHN C. FINERTY). *VA Hosp., Coral Gables.* (Physiol.)

10:45 **218.** Some properties of purified thrombin. WALTER H. SEEGERS, WALTER G. LEVINE,* RICARDO H. LANDABURU* AND ROBERT S. SHEPARD.* *Wayne State Univ.* (Physiol.)

11:00 **219.** In vitro synthesis of coagulation protein by rat liver slices. JUDITH G. POOL AND JEAN ROBINSON (intr. by ELLEN BROWN). *Stanford Univ. School of Medicine.* (Physiol.)

11:15 **220.** Prevention of generalized Shwartzman phenomenon with Sodium Warfarin. SANDOR SHAPIRO* AND DONALD MCKAY. *Harvard Med. School.* (Pathol.)

11:30 **221.** Prevention and production of thrombosis by alterations in electric environment. SEYMOUR I. SCHWARTZ (intr. by H. E. PEARSE). *Univ. of Rochester School of Medicine.* (Pathol.)

11:45 **222.** Prevention of generalized Shwartzman phenomenon by fibrinolysis. ALLAN KLIMAN* AND DONALD MCKAY. *Harvard Med. School.* (Pathol.)

Atherosclerosis V: Cholesterol Metabolism

FRI. A.M.—IRVINE AUDITORIUM

Chairman: F. A. Kummerow

9:00 **223.** Absorption of dihydrocholesterol GEORGE V. VAHOUNY,* R. MAYER* AND C. R. TREADWELL. *George Washington Univ.* (Biochem.)

9:15 **224.** Effect of cholesterol esterase inhibitors on absorption of cholesterol in the rat. S. GORDON AND W. P. CEKLENIAK (intr. by B. L. HUTCHINGS). *American Cyanamid Co.* (Biochem.)

9:30 **225.** Aspects of fluorometric analysis for total cholesterol in serum and tissue. S. G. KAHN AND H. YACOWITZ (intr. by J. O. LAMPEN). *Squibb Inst. for Med. Research.* (Biochem.)

9:45 **226.** Changes in lipids of hypercholesterolemic serum perfused through the rabbit heart. HARVEY I. MILLER, PAUL S. ROHEIM AND JOHN J. SPITZER (intr. by E. A. REED). *Hahnemann Med. College.* (Physiol.)

10:00 **227.** Composition of dietary fat: its relation to fatty acid components of liver cholesterol ester. RUTH OKEY AND ANNE Z. HARRIS.* *Univ. of California.* (Nutr.)

10:15 **228.** Cholesterol synthesis in human liver. C. BRUCE TAYLOR, G. E. COX,* C. B. DAVIS, JR.* AND STANLEY L. CROSS.* *Presbyterian-St. Luke's Hosp., Chicago.* (Pathol.)

10:30 **229.** Interrelation of cholesterol, palmitic acid and unsaturated fatty acids in the growing mouse. D. K. BOSSHARDT AND E. E. HOWE. *Merck Inst. for Therapeutic Research.* (Nutr.)

10:45 **230.** Steroid effects on EFA-deficiency. DAVID GAMBAL* AND F. W. QUACKENBUSH. *Purdue Univ.* (Biochem.)

11:00 **231.** Fatty acid specificity and saponin inhibition of cholesterol esterases. H. A. NEWMAN,* S. N. SHAH* AND F. A. KUMMEROW. *Univ. of Illinois.* (Nutr.)

11:15 **232.** Dietary cholesterol and cottonseed oil on free and bound cholesterol and lipid-phosphorus content of rabbit and rat adrenals, aortas, heart muscles and plasmas. JAY W. CONSTANTINE,* CLIFFORD A. ANGERER AND FLORENCE KRAFT.* *Ohio State Univ. College of Medicine.* (Physiol.)

11:30 **233.** Effect of linoleic acid on incorporation of radiocarbon into cholesterol. JOSEPH M. MERRILL (intr. by GEORGE R. MENEELY). *VA Hosp., Nashville.* (Physiol.)

Friday Afternoon, April 18, 1:30 p.m.

Blood Clotting IV

FRI. P.M.—PENN SHERWOOD, BALLROOM

Chairman: Walter H. Seegers

1:30 **234.** Use of radio-opaque medium in the study of intravascular coagulation and clot lysis. PAUL W. BOYLES (intr. by RALPH JONES, JR.). *Miami Heart Inst. and Univ. of Miami School of Medicine.* (Pharmacol.)

1:45 **235.** Fibrinolytic potentiality of blood plasma. M. MASON GUEST AND D. R. CELANDER.* *Univ. of Texas Med. Branch.* (Physiol.)

2:00 **236.** Activation of human plasminogen. G. MARKUS,* C. M. AMBRUS, F. WHISTLER* AND D. L. WOERNLEY.* *Roswell Park Memorial Inst.* (Physiol.)

2:15 **237.** Human plasmin. Certain aspects of plasmin precursor and activator precursor system. WERNER BAUMGARTEN, ROSE B. COLE, MAUREL N. RICHARD AND WILLIAM E. SMITH (intr. by CURT C. PORTER). *Merck Sharp & Dohme Research Labs.* (Biochem.)

2:30 **238.** Mechanism of clot lysis by plasmin. NORMA ALKJAERSIG,* ANTHONY FLETCHER* AND SOL SHERRY. *Jewish Hosp. and Washington Univ.* (Physiol.)

2:45 **239.** Hydrolysis of various substrates by fibrinolysin. LOUISE LANG PHILLIPS (intr. by LANDRUM B. SHETTLES). *Columbia Univ.* (Physiol.)

3:00 **240.** Resistance of pharmacologic effects of plasmin. N. BACK AND I. B. MINK (intr. by J. L. AMBRUS). *Univ. of Buffalo and Roswell Park Memorial Inst.* (Pharmacol.)

3:15 **241.** Comparison of therapeutic and side effects of streptokinase-, urokinase- and spontaneously-activated plasmin in thromboembolism. J. L. AMBRUS, N. BACK,* C. M. AMBRUS, DONNA REDDINGTON* AND R. R. SHIELDS.* *Roswell Park Memorial Inst. and Univ. of Buffalo Med. School.* (Pharmacol.)

3:30 **242.** Quantitative determination of urokinase. KURT N. VON KAULLA, E. SCHNEEBERGER* AND MARCIA CURRY.* *Univ. of Colorado School of Medicine and Belle Bonfils Memorial Blood Bank.* (Physiol.)

3:45 **243.** Urokinase excretion in man and animals. FOTIOS E. SMYRNIOTIS (intr. by W. M. LANDAU). *Jewish Hosp., St. Louis.* (Physiol.)

Atherosclerosis VI: Lipoproteins

FRI. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: J. H. Bragdon

1:30 **244.** Effect of high and low fat diets on serum lipoprotein pattern of dogs. LIESE L. ABELL AND FORREST E. KENDALL. *Columbia Univ.* (Biochem.)

1:45 **245.** Nature and function of chylomicron proteins. MARTIN RODBELL AND DONALD S. FREDERICKSON (intr. by S. ARONOFF). *Natl. Heart Inst.* (Biochem.)

2:00 **246.** Physical-chemical studies of β-lipoprotein. J. L. ONCLEY AND E. TORO-GOYCO.* *Harvard Med. School.* (Biochem.)

2:15 **247.** Alterations of electrophoretic mobility of serum lipoproteins by non-ionic detergents. THEODORE TSALTAS AND HENN KUTT (intr. by E. H. AHRENS, JR.). *New York Univ.* (Biochem.)

2:30 **248.** Partition of serum unesterified fatty acids (UFA) between albumin and lipoproteins. ELEAZAR SHAFRIR (intr. by SYDNEY S. CHERNICK). *Natl. Heart Inst.* (Biochem.)

2:45 **249.** Net synthesis of low density plasma lipoproteins by rat liver slices. JULIAN B. MARSH. *Univ. of Pennsylvania School of Medicine and Grad. School of Medicine.* (Biochem.)

3:00 **250.** Iodinated triolein: a lipid tracer for the study of plasma lipoprotein metabolism. FRED A. KRUGER,* DAVID G. CORNWELL,* GEORGE J. HAMWI* AND J. B. BROWN. *Ohio State Univ.* (Biochem.)

3:15 **251.** Lipid content of pathologic serous fluids. DONALD A. KELLOGG* AND GEORGE V. MANN. *Harvard School of Public Health.* (Nutr.)

3:30 **252.** Demonstration of lipoprotein lipase in fasting human serum. HERBERT S. GATES, JR. AND ROBERT S. GORDON, JR. (intr. by J. BRAGDON). *Natl. Heart Inst.* (Pathol.)

3:45 **253.** Deficiencies in the lipoprotein lipase system in arteriosclerosis and aging. L. O. PILGERAM. *St. Barnabas Hosp. and Univ. of Minnesota School of Medicine.* (Biochem.)

4:00 **254.** In vitro incorporation of cholesterol into serum lipoproteins. JOEL AVIGAN (intr. by JAMES H. BAXTER). *Natl. Heart Inst.* (Pharmacol.)

THE AMERICAN PHYSIOLOGICAL SOCIETY

Eightieth Meeting

Monday Afternoon: April 14, 1:30 p.m.

Electrolytes

MON. P.M.—CONVENTION HALL, ROOM A

Chairman: Stanley E. Bradley

1:30 **255.** Determination of ether-soluble sodium and potassium in rat kidney. EDWARD L. RHODES AND JOHN C. VANATTA (intr. by R. W. LACKEY). *Univ. of Texas Southwestern Med. School.*

1:45 **256.** Quinidine and digitalis effects on cation kinetics and circulation of the isolated heart. H. L. CONN, JR. AND J. C. WOOD.* *Univ. of Pennsylvania.*

2:00 **257.** The pH of K deficient rat muscle. R. E. ECKEL, A. W. BOTSCHNER AND D. H. WOOD (intr. by R. W. ECKSTEIN). *Western Reserve Univ.*

2:15 **258.** Measurement of intracellular sodium of muscle using an isotopic dilution method. JOHN C. VANATTA AND ALLEN F. REID. *Univ. of Texas Southwestern Med. School.*

2:30 **259.** Post-traumatic sodium retention. H. E. JØRGENSEN* AND J. U. SCHLEGEL. *Univ. of Rochester School of Medicine.*

2:45 **260.** Nervous control of salt-secreting gland in the gull. RAGNAR FÄNGE AND KNUT SCHMIDT-NIELSEN (intr. by HANS LOWENBACH). *Duke Univ.*

3:00 **261.** Extrarenal salt excretion. KNUT SCHMIDT-NIELSEN AND RAGNAR FÄNGE.* *Duke Univ.*

3:15 **262.** True chloride content of tissues. ERNEST COTLOVE AND NORDICA D. GREEN (intr. by T. J. KENNEDY, JR.). *Natl. Heart Inst.*

3:30 **263.** Electrolyte composition of costal cartilage. EARSIE W. DELCHAMPS,* DAVID S. HOWELL AND WILLIAM REIMER.* *Univ. of Miami.*

3:45 General discussion.

Gastric Secretion

MON. P.M.—CONVENTION HALL, ROOM B

Chairman: Warren S. Rehm

1:30 **264.** Inhibition of gastric secretion by topically applied histamine. FRANKLIN HOLLANDER AND ADOLFO SCHAPIRA.* *Mount Sinai Hosp., New York.*

1:45 **265.** Derivatives of histamine metabolism, inhibitors of histamine metabolism and gastric secretion. A. C. IVY. *Univ. of Illinois College of Medicine.*

2:00 **266.** Gastric secretory responses to graded doses of histamine in dogs with gastric fistula and esophagostomy. I. N. MARKS* AND S. A. KOMAROV. *Fels Research Inst., Temple Univ. Med. Ctr.*

2:15 **267.** Intravenous histamine and gastric pepsin in the dog. ROBERT ABRAMS* AND FRANK P. BROOKS. *Univ. of Pennsylvania.*

2:30 **268.** Stimulating effect of subcutaneous aminoguanidine and iproniazid (histaminase inhibitors) on gastric secretory response to a meal. KURT V. LIEPINS (intr. by ARCHER S. GORDON). *Univ. of Illinois College of Medicine.*

2:45 **269.** Effect of serotonin and its precursor on interdigestive gastric secretion in the rat. HARRY SHAY, DAVID C. H. SUN* AND MARGOT GRUENSTEIN.* *Fels Research Inst., Temple Univ. Med. Ctr.*

3:00 **270.** Effect of procaine hydrochloride on gastric secretion. V. YANOVSKY,* A. YANOVSKY* AND I. J. PINCUS. *Woman's Med. College of Pennsylvania.*

3:15 **271.** Inhibition of gastric secretion by glucagon and glucose in the dog. T. M. LIN AND R. S. ALPHIN (intr. by K. K. CHEN). *Lilly Research Labs.*

3:30 **272.** Diamox and Diuril studies on stomach. CIPRIANO CANOSA,* KATHRYN C.

KALKHOF* AND W. S. REHM. *Univ. of Louisville.*

3:45 **273.** Oxygen requirements for acid secretion by dog stomach. HUBERT APPERT* AND M. H. F. FRIEDMAN. *Jefferson Med. College.*

4:00 **274.** Quantitation of pepsin in gastric juice by paper-electrophoresis. G. B. JERZY GLASS, LOUKIA STEPHANSON-LIOUNIS,* MARILYN RICH* AND SALLIE E. MITCHELL.* *New York Med. College.*

4:15 **275.** Effects of atropine on synthesis, storage and secretion of pepsinogen in rat. B. I. HIRSCHOWITZ, D. K. O'LEARY, I. N. MARKS AND HARRY SHAY (intr. by STANLEY LORBER). *Fels Research Inst., Temple Univ. Med. Ctr.*

O_2 and CO_2 Tensions

MON. P.M.—CONVENTION HALL, ROOM C

Chairman: Hermann Rahn

1:30 **276.** Inadequacy of cerebral venous pO_2 as an index of mean brain tissue oxygen tension: influence of changes in arterial pO_2 on cerebral venous and calculated mean capillary oxygen tension at fixed arterial pCO_2. J. TURNER, C. J. LAMBERTSEN, S. G. OWEN, H. WENDEL, H. CHIODI AND P. LINAWEAVER (intr. by JONATHAN RHOADS). *Univ. of Pennsylvania School of Medicine.*

1:45 **277.** Modification of oxygen toxicity in mice by methylene blue. DANIEL CACCAMISE,* DANIEL L. GILBERT* AND REBECA GERSCHMAN. *Univ. of Rochester School of Medicine.*

2:00 **278.** Lung damage by oxygen using differential catheterization. KENNETH E. PENROD. *Duke Univ. School of Medicine.*

2:15 **279.** Construction and use of a modified Clark-type of oxygen electrode for liquid or gas analysis. TAKEMARU MIKOUCHI AND GEORGE A. SAXTON, JR. (intr. by PERCIVAL BAILEY). *Univ. of Illinois College of Medicine and Research and Educational Hosps., Chicago.*

2:30 **280.** Mechanism of CO_2 transport during breath holding. JOHN C. MITHOEFER (intr. by JAMES BORDLEY III). *Mary Imogene Bassett Hosp.*

2:45 **281.** Pulmonary gas exchange and blood gas transport during and after skin diving to 90 feet. K. E. SCHAEFER, G. NICHOLS, JR.,* R. C. STROUD* AND C. R. CAREY.* *U.S. Naval Med. Research Lab. and Harvard Med. School.*

3:00 **282.** Iso-pCO_2 technique for studying ventilatory response to injected HCl. DARIO B. DOMIZI,* JOHN F. PERKINS, JR. AND JOAN S. BYRNE.* *Univ. of Chicago.*

3:15 **283.** Respiratory effects in normal men of blood pH change at "constant" arterial and internal jugular venous pCO_2. C. J. LAMBERTSEN, M. G. SMYTH,* S. J. G. SEMPLE* AND R. GELFAND.* *Univ. of Pennsylvania Med. School.*

3:30 **284.** Errors in pH measurement arising in calomel reference electrodes. A. FREEMAN BRADLEY* AND JOHN W. SEVERINGHAUS. *Natl. Heart Inst.*

3:45 **285.** Retention of CO_2 following carbonic anhydrase inhibition. S. M. CAIN,* R. F. LEEDS,* L. P. TRAVIS* AND A. B. OTIS. *Univ. of Florida College of Medicine.*

4:00 **286.** High CO_2 and blood O_2 saturation. J. D. MACARTHUR AND E. B. BROWN, JR. (intr. by VICTOR LORBER). *Univ. of Minnesota.*

Cardiac Output, Cardiac Work

MON. P.M.—CONVENTION HALL, BALLROOM

Chairman: Philip Dow

1:30 **287.** Continuous measurement of cardiac output in conscious dogs by means of an indwelling magnet and the square-wave magnetic flowmeter. MERRILL P. SPENCER, ADAM B. DENISON, JR. AND CHARLES A. BAREFOOT.* *Bowman Gray School of Medicine.*

1:45 **288.** Effect of niacinamide on cardiac output in dogs. T. F. HUANG,* S. D. PAWGAN* AND F. F. KAO. *State Univ. of New York Downstate Med. Ctr.*

2:00 **289.** Acetylcholine and cardiac output. M. H. HARMEL, J. D. ELDER, T. HOSONO, S. D. PAWGAN AND F. F. KAO (intr. by E. E. SUCKLING). *State Univ. of New York Downstate Med. Ctr.*

2:15 **290.** Hemodynamic effects of cardiac glycosides on normal subjects during rest and exercise. M. HENRY WILLIAMS, JR., L. ZOHMAN* AND A. C. RATNER.* *Grasslands Hosp., Valhalla, N. Y.*

2:30 **291.** Pulmonary blood flow by dilution curves: use of a central sampling technic. ANDRE DAVID,* H. J. C. SWAN AND EARL H. WOOD. *Mayo Clinic and Mayo Fndn.*

2:45 **292.** Circulation of blood in goats. RUBERT S. ANDERSON, FRED W. STEMLER,* EARL B. ROGERS* AND RAYMOND F. MCHUGH.* *Directorate of Med. Research, Army Chemical Ctr.*

3:00 **293.** Ventricular response to sudden work loads. N. M. BUCKLEY, N. J. ZEIG* AND E. P. PORTER.* *Albert Einstein College of Medicine.*

3:15 **294.** Mechanical behavior of rat papillary muscle. JOHN J. KELLY AND B. F. HOFFMAN (intr. by J. O. PINKSTON). *State Univ. of New York Downstate Med. Ctr.*

3:30 **295.** Myocardial oxygen tension of intact dog heart. FRANK GOLLAN. *VA Hosp., Nashville.*

3:45 **296.** Metabolism of glucose-C^{14} to CO_2 and glycogen by isolated perfused heart. H. MEAD CAVERT, SANG DON RHEE* AND RUTH B. DEAL.* *Univ. of Minnesota.*

4:00 **297.** Oxygen consumption of dog myocardium at reduced temperature and influence of glycine on its rate. THOMAS W. NIELSEN AND ALAN W. SEXTON (intr. by JOHN L. CHAPIN). *Univ. of Colorado School of Medicine.*

4:15 **298.** Left ventricular cation exchange: effects of epinephrine and norepinephrine. JERRY E. SCHMITTHENNER,* IVAN FORTE,* J. H. HAFKENSCHIEL AND CECILIA RIEGEL.* *Lankenau Hosp.*

4:30 **299.** Sucrose and inulin: kinetics and volume of distribution in heart muscle. DAVID E. SCHAFER* AND JOHN A. JOHNSON. *Univ. of Minnesota.*

Hypothermia

MON. P.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: John Field, II

1:30 **300.** Effects of hypothermia on cold injury in mice. JOHN B. ROBERTS* AND ESTHER HARDENBERGH. *Naval Med. Research Inst.*

1:45 **301.** Influence of body temperature on cardiac sensitivity to potassium. G. B. SPURR, GEORGE BARLOW,* HAYDEN LAMBERT* AND ROBERT L. BOWE. *Univ. of Tennessee College of Medicine.*

2:00 **302.** Cardiac metabolism and function during hypothermia. JOHN P. HANNON (intr. by RAYMOND J. HOCK). *Arctic Aeromed. Lab., Alaska.*

2:15 **303.** Effect of cedilanid on the hypothermic dog electrocardiogram. LOUIS H. NAHUM AND RAYMOND E. PHILLIPS.* *Yale Univ.*

2:30 **304.** Effect of hypothermia and rewarming on blood volume determined simultaneously with CR-51 and T-1824. E. J. FEDOR* AND BERNARD FISHER. *Univ. of Pittsburgh.*

2:45 **305.** Glucose Tm during hypothermia. G. S. KANTER. *Albany Med. College.*

3:00 **306.** Circulating levels of 17-hydroxycorticosteroid in hypothermia. GEORGE BARLOW, G. B. SPURR AND ROBERT L. BOWE (intr. by R. R. OVERMAN). *Univ. of Tennessee College of Medicine.*

3:15 **307.** Chlorpromazine induced hypothermia in rats. J. LEBLANC. *U.S. Army Chemical Warfare Labs.*

3:30 **308.** Prolonged lethargic hypothermia in rat and ground-squirrel. VOJIN POPOVIC (intr. by E. F. ADOLPH). *Univ. of Rochester School of Medicine.*

3:45 **309.** Influence of intravenous infusions on death from immersion hypothermia. C. H. WILLIAM RUHE. *Univ. of Pittsburgh School of Medicine.*

4:00 **310.** Comparison of temperature response of some homeotherms to tranquilizing and related drugs. R. A. HOFFMAN* AND C. G. WILBER. *U.S. Army Chemical Warfare Labs.*

Erythrocytes, Bone Marrow

MON. P.M.—NURSES BLDG., ROOM 102

Chairman: Walter H. Seegers

1:30 **311.** Concentration of erythropoietic hormone in plasma of anemic rabbits. W. C. GRANT, W. H. LINKENHEIMER* AND H. BERGER.* *American Cyanamid Co.*

1:45 **312.** Erythropoietic activity in plasma of anemic dogs. F. W. KINARD AND F. F. GRIFFIN, JR.* *Med. College of South Carolina.*

2:00 **313.** Partial purification and characterization of erythropoietin. W. A. RAMBACH, J. A. D. COOPER AND H. L. ALT (intr. by F. S. GRODINS). *Northwestern Univ. Med. School.*

2:15 **314.** Differences in action of human, hog and dog gastric juice on absorption of Co-60 vitamin B_{12} by rat liver slice. PHILIP C. JOHNSON AND THEDA DRISCOLL (intr. by STEWART WOLF). *VA Hosp. and Univ. of Oklahoma.*

2:30 **315.** Erythropoietic stimulating factor in cobalt plasma. JOHN EMERSON DAVIS. *Univ. of Texas College of Pharmacy.*

2:45 **316.** Granulocyte life cycle. MARY A. MALONEY* AND HARVEY M. PATT. *Argonne Natl. Lab.*

3:00 **317.** Effects of low pressure on peripheral blood picture and bone marrow cytology in sham-control and endocrine-deficient rat. SAM J. PILIERO. *New York Med. College.*

3:15 **318.** Erythrocyte hydration under positive acceleration. RICHARD L. FENICHEL AND G. KYDD (intr. by A. STOLL). *U.S. Naval Air Development Ctr., Johnsville, Pa.*

3:30 **319.** Hemopoiesis in isolated perfused hind limbs of hypophysectomized rats. ALBERT S. GORDON, BURTON S. DORNFEST,*

CHARLES D. SIEGEL* AND NAOMI GOTTLIEB.* *New York Univ. Grad. School of Arts and Science.*

3:45 **320.** Hemolysis and freezing velocity. P. M. GEHENIO* AND B. J. LUYET. *St. Louis Univ.*

4:00 **321.** Viability of erythrocytes after freezing in polymer solutions. HENRY A. SLOVITER. *Univ. of Pennsylvania School of Medicine.* (Biochem.)

4:15 **322.** Peritoneal absorption of labeled red blood cells and albumin by thoracic and right lymphatic duct routes in anesthetized rats. JOHN C. SCHOOLEY* AND W. O. REINHARDT. *Donner Lab. and Univ. of California.*

4:30 **323.** Mechanical and osmotic fragilities of erythrocytes. JOHN A. RUMSFELD AND P. F. WAGLEY (intr. by R. V. BROWN). *U.S. Army Chemical Warfare Labs.* (Pharmacol.)

Cerebral Cortex

MON. P.M.—MILLS BLDG., ROOM 205

Chairman: Phillip Bard

1:30 **324.** Concepts and problems concerning the physiology of the cerebral cortex. PHILLIP BARD. *Johns Hopkins Univ.*

2:00 **325.** Auditory cortex of squirrel monkey (Saimiri sciureus). J. E. HIND, JR.,* R. M. BENJAMIN* AND C. N. WOOLSEY. *Med. School, Univ. of Wisconsin.*

2:15 **326.** Anatomical analysis of the supplementary motor area. JUNE L. DEVITO AND ORVILLE A. SMITH (intr. by H. N. HARKINS). *Univ. of Washington.*

2:30 **327.** Electrophysiological analysis of supplementary motor area. ORVILLE A. SMITH,* JUNE L. DEVITO* AND HARRY D. PATTON. *Univ. of Washington.*

2:45 **328.** Nature of the steady potential across the mammalian cerebral cortex. GEORGE B. FRANK (intr. by M. NICKERSON). *McGill Univ. and Univ. of Manitoba.*

3:00 **329.** Effects of metals implanted in cerebral cortex of monkeys. JOSEPH G. CHUSID AND LENORE M. KOPELOFF.* *New York Psychiatric Inst. and St. Vincent's Hosp., New York City.*

3:15 **330.** Interaction of cerebral cortical responses elicited by direct stimulation at two sites. SIDNEY OCHS (intr. by E. L. PORTER). *Univ. of Texas Med. Branch.*

3:30 **331.** Effects of insulin on evoked cortical responses in the cat. R. G. GRENELL AND J. K. MERLIS.* *Univ. of Maryland.*

3:45 **332.** Afferent inhibition in somatic sensory system of the monkey. THOMAS P. S. POWELL* AND VERNON B. MOUNTCASTLE. *Johns Hopkins Univ. School of Medicine.*

4:00 **333.** Early projection of large muscle afferents from forelimb of cat to somatosensory cortex. VAHE E. AMASSIAN AND LOUIS BERLIN.* *Albert Einstein College of Medicine.*

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Open House by Laboratories

See page 672 for complete schedule

Tuesday Morning, April 15, 9.00 a.m.

Session on Teaching: Some Basic Problems Pertaining to the Teaching of Physiology to Dental Students

TUES. A.M.—CONVENTION HALL, ROOM A

Chairman: Roy O. Greep

9:00 **334.** Introductory remarks. A spectrum of opinion concerning the arranging of instruction. ROY O. GREEP. *Harvard School of Dental Medicine.*

9:10 Scope, points of emphasis and objectives of courses in physiology for dental classes.

335. JOHN R. BROBECK, *Univ. of Pennsylvania.* (10 min.)

336. JOHN HALDI. *Emory Univ.* (10 min.)

Discussion (30 min.)

10:00 Comparative strengths and shortcomings of existing departmental arrangements for instructing dental students.

337. GEORGE E. WAKERLIN. *Univ. of Illinois.* (10 min.)

338. S. WAH LEUNG. *Univ. of Pittsburgh.* (10 min.)

Discussion (30 min.)

10:50 **339.** Commentary. GEORGE SAYERS. *Western Reserve Univ.*

Peripheral Circulation I

TUES. A.M.—CONVENTION HALL, ROOM B

Chairman: Maurice B. Visscher

9:00 **340.** Concepts and problems concerning peripheral circulation. MAURICE B. VISSCHER. *Univ. of Minnesota.*

9:30 **341.** Effect of histamine and acetylcholine upon systemic large and small vessel resistances. FRANCIS J. HADDY. *Northwestern Univ. and VA Research Hosp.*

9:45 **342.** Vascular effects of small doses of 1-epinephrine in perfused hindlimb of the dog. MARTIN ZUKOF,* JOHN DIANA* AND OSCAR W. SHADLE. *Univ. of Louisville Med. School.*

10:00 **343.** Direct effects of epinephrine and norepinephrine on limb vessels. C. R. HONIG AND P. V. GABEL (intr. by W. T. POMMERENKE). *Univ. of Rochester School of Medicine.*

10:15 **344.** Interaction of serotonin and the adrenalines upon limb resistance, cardiac rate and systemic arterial blood pressure. PAUL GORDON,* MORRIS A. LIPTON AND FRANCIS J. HADDY. *Northwestern Univ. and VA Research Hosp.*

10:30 **345.** Chondrogenesis induced in arteries by reduction in vascular extensibility. SIMON RODBARD. *Univ. of Buffalo Chronic Disease Research Inst.*

10:45 **346.** Comparison of reflex constriction in leg and forearm veins. E. P. HIATT, SIDNEY D. LEVERETT* AND STUART BONDURANT.* *Aero Med. Lab., WADC, Wright-Patterson Air Force Base.*

11:00 **347.** Reflex control of resistance blood vessels of human skeletal muscle. J. T. SHEPHERD, I. C. RODDIE AND R. F. WHELAN (intr. by E. H. WOOD). *The Queen's Univ., Belfast.*

11:15 **348.** Influence of experimental A-V fistula on the circulation distal to the fistula. JOHN N. HENRIE,* KHALIL G. WAKIM, EINER W. JOHNSON, JR.* AND ALAN L. ORVIS.* *Mayo Clinic and Mayo Fndn.*

11:30 **349.** Distribution of PAH between erythrocytes and plasma in man and animals with special reference to splanchnic intravascular movement. HENRY O. WHEELER,* KATHERINE J. BAKER,* ROBERT M. EPSTEIN* AND STANLEY E. BRADLEY. *Columbia Univ.*

11:45 **350.** Human muscle oxygen tension by polarography. O. HORWITZ, G. PEIRCE,* C. FORNO* AND H. E. HOLLING.* *Univ. of Pennsylvania.*

Muscle: Chemical Elementary Processes

TUES. A.M.—CONVENTION HALL, ROOM C

Chairman: Robert W. Ramsey

9:00 **351.** Interactions of bound nucleotide of actin. RICHARD C. STROHMAN (intr. by T. HAYASHI). *Columbia Univ.*

9:15 **352.** Bundles of glycerol-treated rabbit psoas muscle as ATPase and working models. WILLIAM J. BOWEN. *Natl. Insts. of Health.*

9:30 **353.** Effect of exposure to AET on ATPase activity of dissolved myosin B. MANUEL MORALES AND ROGER DURANT.* *Naval Med. Research Inst.*

9:45 **354.** Mammalian sperm cell models reactivated by ATP. D. W. BISHOP (intr. by SEYMOUR KATSH). *Carnegie Inst. of Washington.*

10:00 **355.** Role of anion permeation in muscle contraction. GERTRUDE FALK AND W. ROBERT MCGRATH.* *Univ. of Washington.*

10:15 **356.** Oxidation-reduction changes of cytochromes following stimulation of cardiac muscle of Bufo. JOSE RAMIREZ (intr. by BRITTON CHANCE). *Univ. of Pennsylvania.*

10:30 **357.** Effect of lipid soluble analogues of acetylcholine on muscle. L. HINTERBUCHNER, I. B. WILSON AND E. SCHOFFENIELS (intr. by D. NACHMANSOHN). *Columbia Univ.*

10:45 **358.** Quantal activation of vesical smooth muscle by motor nerve stimulation. JAMES TANKERSLEY AND F. G. CARPENTER (intr. by R. E. GOSSELIN). *Dartmouth Med. School.*

11:00 **359.** Effect of ions on response of smooth muscle to cooling. RITA GUTTMAN AND SAMUEL ROSS.* *Brooklyn College, State Univ. of New York College of Medicine and Marine Biological Lab.*

11:15 **360.** Assay of cytochrome c oxidase, reductase and myoglobin in vitamin E deficient rabbits and dystrophic mice. JOHN R. ALLEN, B. A. SULLIVAN AND HAROLD L. DOBSON (intr. by JAMES A. GREENE). *Baylor Univ. College of Medicine.*

11:30 **361.** Stability of glucose uptake by human forearm despite increased arterial glucose concentration. REUBIN ANDRES AND KENNETH L. ZIERLER. *Johns Hopkins Univ.*

11:45 **362.** Metabolic studies on muscle fibers from rats and humans. R. D. PETERSON, C. H. BEATTY, R. M. BOCEK* AND E. S. WEST. *Univ. of Oregon Med. School.* (Biochem.)

12:00 **363.** A continuous flow method for the study of the metabolism of rat diaphragm. G. R. WILLIAMS (intr. by C. S. HANES). *Univ. of Toronto.* (Biochem.)

Renal: Tubular Function

TUES. A.M.—CONVENTION HALL, BALLROOM

Chairman: William D. Lotspeich

9:00 **364.** Stop flow analysis of sodium reabsorption. R. L. MALVIN,* W. S. WILDE, L. P. SULLIVAN* AND A. J. VANDER.* *Univ. of Michigan.*

9:15 **365.** Site of action of mercurial diuretics by stop flow analysis. A. J. VANDER, R. L. MALVIN, W. S. WILDE AND L. P. SULLIVAN (intr. by VIRGINIA D. DAVENPORT). *Univ. of Michigan.*

9:30 **366.** Site of renal transport of potassium as revealed by stop flow analysis. L. P. SULLIVAN, W. S. WILDE, R. L. MALVIN AND A. J. VANDER (intr. by H. W. DAVENPORT). *Univ. of Michigan.*

9:45 **367.** Stop-flow localization of urine acidification and phosphate reabsorption in the dog. R. F. PITTS, R. S. GURD,* R. H. KESSLER* AND K. HIERHOLZER.* *Cornell Univ. Med. College.*

10:00 **368.** Effect of graded doses of phlorizin on tubular glucose transport in vivo and swelling of kidney mitochondria in isotonic sucrose in vitro. WILLIAM D. LOTSPEICH AND DANIEL M. KELLER.* *Univ. of Cincinnati College of Medicine.*

10:15 **369.** Excretion of D and L isomers of malic acid in the chicken. P. VISHWAKARMA (intr. by CLARK WEST). *Univ. of Cincinnati College of Medicine.*

10:30 **370.** Effect of trimethylamine-HCl on the urinary pH of the marine dogfish. JULIUS J. COHEN AND CHARLES A. BILTZ.* *Univ. of Cincinnati College of Medicine and Mt. Desert Island Biological Lab.*

10:45 **371.** Effects of unilateral renal arterial infusion of chlorothiazide. A. R. LAVENDER* AND THEODORE N. PULLMAN. *Univ. of Chicago.*

11:00 **372.** Effects of chlorothiazide on metabolism of fresh renal cortical slices. C. L. FLANAGAN* AND D. P. EARLE. *Northwestern Univ. Med. School.*

11:15 **373.** Effects of acetazolemide and chlorothiazide on distal tubular processes in the nephron of the dog. K. HIERHOLZER, R. F. PITTS, R. S. GURD AND R. H. KESSLER (intr. by D. J. EDWARDS). *Cornell Univ. Med. College.*

11:30 **374.** Accumulation of para-aminohippurate and tetraethylammonium by renal slices of newborn puppy and piglet. BARBARA R. RENNICK AND BYRON HAMILTON (intr. by O. W. SARTORIUS). *State Univ. of New York College of Medicine.*

11:45 **375.** Distribution of Diodrast-I^{131} in renal tissue of Necturus. W. B. KINTER AND L. L. LEAPE.* *Harvard Med. School.*

Reproduction, Sex Hormones

TUES. A.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: Charles F. Code

9:00 **376.** Ovarian glycogen in gonadotrophin treated normal and hypothyroid rats. K. A. DOEG* AND J. H. LEATHEM. *Rutgers Univ.*

9:15 **377.** Thalamic-hypothalamic function

as related to ovulation in the rat. CHARLES A. BARRACLOUGH (intr. by C. CLEMENTS). *Univ. of California School of Medicine.*

9:30 **378.** Alteration of the bovine estrous cycle with oxytocin. DAVID T. ARMSTRONG AND WILLIAM HANSEL (intr. by H. H. DUKES). *Cornell Univ.*

9:45 **379.** Rapid bioassay method for LH and factors stimulating LH secretion. A. F. PARLOW (intr. by PAUL L. MUNSON). *Harvard Univ. School of Dental Medicine and Med. School.* (Pharmacol.)

10:00 **380.** Relationship between plasma and follicle compositions of viviparous snakes. HERBERT C. DESSAUER AND WADE FOX (intr. by T. HERNANDEZ). *Louisiana State Univ. School of Medicine.*

10:15 **381.** Ovulation following treatment with Dibemamine and Dibenzyline. W. W. MOORE (intr. by SID ROBINSON). *Indiana Univ.*

10:30 **382.** Impairment of oviducal passage of rat ova. SHELDON J. SEGAL,* WARREN O. NELSON AND ANTHONY BOCCABELLA.* *Rockefeller Inst. and State Univ. of Iowa.*

10:45 **383.** In utero uptake of tritium-labeled thymidine. MEYER ATLAS,* V. P. BOND AND E. P. CRONKITE. *Brookhaven Natl. Lab. and Yeshiva Univ.*

11:00 **384.** Growth and reproduction performance of rats given cortisone acetate. GLADYS A. EMERSON AND BETTY SZYMANSKI.* *Merck Inst. of Therapeutic Research.* (Nutr.)

11:15 **385.** Effects of Cortisone, ACTH and prolactin on lactational performance and mammary involution in parturient rats. ROBERT M. JOHNSON* AND B. V. ALFREDSON. *Michigan State Univ.*

11:30 **386.** Libido and its relationship to periodicity in the fecundity of male rabbits. VIRGINIA C. DOGGETT (intr. by FRANK HARRISON). *Univ. of Texas Southwestern Med. School.*

11:45 **387.** Failure of corn oil to prevent testicular lesions caused by erucic acid in the rat. R. L. NOBLE AND K. K. CARROLL.* *Collip Med. Research Lab., Univ. of Western Ontario, Canada.*

Respiration: General

TUES. A.M.—NURSES BLDG., ROOM 102

Chairman: Fred A. Hitchcock

9:00 **388.** Intra-pulmonary mixing of helium in closed circuit systems. R. E. NYE, JR., J. G. KEMENY AND J. L. SNELL (intr. by S. M. TENNEY). *Dartmouth Med. School and College.*

9:15 **389.** Dead space and washout measurements made with helium and sulfur hexafluoride. JERE MEAD, HARRY B. MARTIN* AND C. D. COOK. *Harvard School of Public Health.*

9:30 **390.** Lung volumes in smokers and nonsmokers. HENRY BLACKBURN,* JOSEF BROZEK, WALTER CARLSON* AND HENRY LONGSTREET TAYLOR. *Univ. of Minnesota School of Public Health.*

9:45 **391.** Effect of bilateral resection sequence on tidal ventilation and oxygen uptake. M. T. LATEGOLA AND J. A. SCHILLING (intr. by A. N. TAYLOR). *Univ. of Oklahoma Med. School.*

10:00 **392.** Failure of manual artificial respiration. P. SAFAR (intr. by RICHARD L. RILEY). *Baltimore City Hosp.*

10:15 **393.** Effect of pulmonary congestion on lung afferents. LEROY L. CONSTANTIN (intr. by JURG A. SCHNEIDER). *Columbia Univ.*

10:30 **394.** Oxygen consumption of lung tissue. DOMINGO M. AVIADO, JR. AND SHOJI SAITO.* *Univ. of Pennsylvania Med. School.*

10:45 **395.** Oxygen cost of breathing. R. G. BARTLETT, JR., H. F. BRUBACH* AND H. SPECHT. *Natl. Insts. of Health.*

11:00 **396.** Light induced changes in ventilation and oxygen consumption in birds. STANLEY Z. KRAMER (intr. by F. HAROLD MCCUTCHEON). *Univ. of Pennsylvania.*

11:15 **397.** Relationship between certain pulmonary functions and body dimensions from birth through young adulthood. C. D. COOK, P. J. HELLIESEN AND S. AGATHON (intr. by W. H. FORBES). *Harvard Med. School.*

CNS: Miscellaneous

TUES. A.M.—MILLS BLDG., ROOM 205

Chairman: Seymour S. Kety

9:00 **398.** Cerebral ATP concentration during anoxia in rats. FREDERICK E. SAMSON, JR., WILLIAM M. BALFOUR* AND NANCY DAHL.* *Univ. of Kansas.*

9:15 **399.** Incorporation of C^{14}-labeled glucose into various components of brain during perfusion in situ. A. GEIGER, A. DOMNAS, Y. KAWAKITA AND L. NEBEL. (intr. by F. A. GIBBS). *Univ. of Illinois College of Medicine.*

9:30 **400.** Cerebral metabolism of isotopic lactate in normal humans. WILLIAM SACKS

(intr. by ROBERT RUTMAN). *Albert Einstein Med. Ctr., Southern Div.* (Biochem.)

9:45 **401.** Convulsability of semidecerebrate and corpus callotomized animals. J. J. SEGUIN,* N. A. FRETZ* AND G. W. STAVRAKY. *Univ. of Western Ontario.*

10:00 **402.** Thalamo-cortico-thalamic system. FREDERIC H. JOHNSON (intr. by A. OMACHI) *Univ. of Illinois School of Medicine.*

10:15 **403.** Simple percutaneous method for implantation of electrodes and/or cannulae in the brain. JOHN C. LILLY. *Natl. Inst. of Mental Health.*

10:30 **404.** LSD-25 versus pentobarbital sodium. JULIA T. APTER (intr. by RAY S. SNIDER). *Northwestern Univ.*

10:45 **405.** Conditioning in comatose and aroused cats. H. PARENS AND L. M. N. BACH (intr. by J. K. HAMPTON, JR.). *Tulane Univ. School of Medicine.*

11:00 **406.** Diurnal variations in micturition and drinking in monkeys. WILBUR K. SMITH, ALEXANDRA FELDMAHN* AND CARL LEVENTHAL.* *Univ. of Rochester School of Medicine.*

11:15 **407.** Functional properties of optically evoked potentials in the cerebellum of the cat. WERNER P. KOELLA. *Worcester Fndn. for Exptl. Biology.*

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Visible Index and Message Center

Consult the visible index of registrants to locate your friends—Convention Hall, off the Main Lobby

Press Room

Room 304, Convention Hall

Registration Desks

Convention Hall, Monday–Friday (8 A.M.–5 P.M.)
Headquarters Hotels, Sunday (9 A.M.–9 P.M.); Monday (5–9 P.M.)

Tuesday Afternoon, April 15, 1:30 p.m.

Renal Tubule

TUES. P.M.—CONVENTION HALL, ROOM A

Chairman: Robert F. Pitts

1:30 **408.** Concepts and problems concerning renal tubule physiology. ROBERT F. PITTS. *Cornell Univ. Med. College.*

2:00 **409.** Micropuncture study of osmolality of renal tubular fluid in the hydropenic rat during osmotic diuresis. CARL W. GOTTSCHALK AND MARGARET MYLLE.* *Univ. of North Carolina.*

2:15 **410.** Perfusion of single proximal tubules of necturus kidney: water movement. ERICH E. WINDHAGER,* HANS J. SCHATZMANN,* GUILLERMO WHITTEMBURY* AND A. K. SOLOMON. *Harvard Med. School.*

2:30 **411.** Region of tubule fluid sodium concentration drop in necturus kidney. PHYLLIS A. BOTT. *Woman's Med. College.*

2:45 **412.** Water reabsorption by perfused dog kidney at low temperatures. RODNEY B. HARVEY. *Univ. of Utah.*

3:00 **413.** Factors modifying renal concentrating mechanism in rats. EDWARD P. RADFORD, JR. *Haskell Lab., Newark, Del.*

3:15 **414.** Renal tubular transport of amino and acetamido benzoic and hippuric acids. A. DESPOPOULOS,* D. ARCHER,* K. C. HUANG AND P. K. KNOEFEL. *Univ. of Louisville.* (Pharmacol.)

3:30 **415.** Transtubular movements of urea in the perfused bullfrog kidney. JOHN K. LOVE* AND NATHAN LIFSON. *Univ. of Minnesota.*

3:45 **416.** Renal clearance of urate in human neoplastic disease. DONALD M. WATKIN AND I. BERNARD WEINSTEIN.* *Natl. Cancer Inst.*

SYMPOSIUM: Metabolic Aspects of Adaptation of Warm-Blooded Animals to Cold Environment

TUES. P.M.—CONVENTION HALL, ROOM B

Chairman: L. D. Carlson

1:30 **417.** Introduction. L. D. CARLSON. *Univ. of Washington School of Medicine.*

1:40 **418.** Metabolic studies in animals chronically exposed to cold. J. S. HART. *Natl. Research Labs., Canada.*

2:00 **419.** Studies on man exposed to cold. P. SCHOLANDER. *Univ. of Oslo.*

2:20 **420.** Metabolic studies in hibernating animals. C. LYMAN. *Harvard Univ.*

2:35 **421.** Biochemical mechanisms. V. R. POTTER. *Univ. of Wisconsin Med. School.*

2:50 **422.** Endocrine mechanisms. D. J. INGLE. *Univ. of Chicago.*

3:05 Discussion.

Pulmonary Circulation

TUES. P.M.—CONVENTION HALL, ROOM C

Chairman: Carl F. Schmidt

1:30 **423.** Pulmonary blood volume as a function of pulmonary blood flow. P. F. SALISBURY AND P. M. GALLETTI.* *Cedars of Lebanon Hosp.*

1:45 **424.** Pressure parameters of pulmonary blood flow. ALBERT ROOS, E. L. NAGEL* AND D. C. PROMMAS.* *Washington Univ. School of Medicine.*

2:00 **425.** Relationship of pulmonary venous pressure to rate of pulmonary edema formation. ARTHUR C. GUYTON, ARTHUR W. LINDSEY* AND JOHNNIE O. HOWELL.* *Univ. of Mississippi Med. Ctr.*

2:15 **426.** Influence of long volume and airway pressure on pulmonary vascular resistance in dogs' lungs. R. FRANK,* H. BORST,* E. BERGLUND,* C. COLLIER* AND J. L. WHITTENBERGER. *Harvard School of Public Health.*

2:30 **427.** Effects of occlusion of one pulmonary artery on pulmonary circulation in man. M. BRANDFONBRENER,* G. M. TURINO,* A. HIMMELSTEIN* AND A. P. FISHMAN. *Columbia Univ.*

2:45 **428.** Size of microspheres which pass through pulmonary circuit of dogs. G. C. RING, ALVIN S. BLUM* AND T. KURBATOV.* *Univ. of Miami.*

3:00 **429.** Changes in pulmonary circulation and respiratory gas exchange following hemorrhage. PAUL H. GERST, CHRISTEN RATTENBORG AND DUNCAN A. HOLADAY (intr. by WILLIAM W. WALCOTT). *Columbia Univ.*

3:15 **430.** Effects of pressor agents on pul-

monary vessel pressures during heart block. ALBERT MOWLEM AND GILBERT S. CAMPBELL (intr. by GEORGE FAHR). *Univ. of Minnesota.*

3:30 **431.** Effects of drugs on normal and on serotonin-constricted pulmonary vessels. A. M. RUDOLPH, S. R. DUNCAN AND D. KURLAND (intr. by W. T. GOODALE). *Harvard Med. School and Children's Med. Ctr.*

3:45 **432.** Effects of norepinephrine and 5-HT on pulmonary circulation of the spinal dog. GABRIEL G. NAHAS. *Univ. of Minnesota and Walter Reed Army Inst. of Research.*

4:00 **433.** "Temporary" pulmonary embolization caused by intravenous injections of 5-hydroxytryptamine. W. H. KNISELY, J. M. WALLACE AND W. A. ADDISON (intr. by J. E. MARKEE). *Duke Univ.*

Hypertension

TUES. P.M.—CONVENTION HALL, BALLROOM

Chairman: George E. Wakerlin

1:30 **434.** Concepts and problems concerning hypertension. GEORGE E. WAKERLIN. *Univ. of Illinois Med. School.*

2:00 **435.** Femoral flow bio-assay technique for testing vasodilator potency of human urine: improved reproducibility with thorough mixing. L. C. SARNOFF AND K. E. SUSSMAN (intr. by B. R. BOONE). *Natl. Heart Insts.*

2:15 **436.** Influence of human urine and nitroglycerine on coronary vascular resistance and O_2 consumption in the isolated supported heart. R. B. CASE,* S. J. SARNOFF AND R. MACRUZ* (intr. by L. DOTTI). *Natl. Heart Inst.*

2:30 **437.** Diminished vasodilator activity in urine of patients with orthostatic hypotension. K. E. SUSSMAN, L. C. SARNOFF AND STANLEY J. SARNOFF (intr. by J. A. SHANNON). *Natl. Heart Inst.*

2:45 **438.** Plasma renin in unilateral renal disease. F. W. HAYNES, J. H. HARRISON,* H. C. GONICK* AND R. C. SMITHWICK.* *Harvard Med. School and Boston Univ. School of Medicine.*

3:00 **439.** Juxtaglomerular granulation in experimental hypertension. LOUIS TOBIAN, JEANETTE JANECEK* AND ALICE TOMBOULIAN.* *Univ. of Minnesota.*

3:15 **440.** Effects of injected dextran on connective tissue mast-cells and on cells of afferent glomerular artery of the rat kidney. ALDO N. CORBASCIO (intr. by Russel D. Squires). *Univ. of Pennsylvania Med. School.*

3:30 **441.** Role of the intact kidney in experimental hypertension. P. BLAQUIER,* A. GOMEZ* AND S. W. HOOBLER. *Univ. of Michigan Med. School.*

3:45 **442.** Elevated blood pressure and kidney size. DAVID B. GORDON (intr. by W. GLEN MOSS). *Univ. of Miami School of Medicine.*

4:00 **443.** Effect of propylthiouracil on development and maintenance of renal hypertension in rats. MELVIN J. FREGLY. *Univ. of Florida.*

Cellular Physiology

TUES. P.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: John O. Hutchens

1:30 **444.** Physico-chemical analysis of the mitotic apparatus. ARTHUR M. ZIMMERMAN (intr. by HARDIN B. JONES). *Univ. of California.*

1:45 **445.** Free and protein amino acids of Tetrahymena pyriformis in relation to cell division. OTTO H. SCHERBAUM* AND THEODORE L. JAHN. *Univ. of California.*

2:00 **446.** Enzyme patterns of kidney cells grown in culture. H. BURLINGTON (intr. by GUSTAV ECKSTEIN). *Univ. of Cincinnati College of Medicine.*

2:15 **447.** Regulation of tissue respiration. A. T. MILLER, JR., DORRIS M. CONOLY* AND MICHAELA GABRIEL.* *Univ. of North Carolina Med. School.*

2:30 **448.** Permeability of water and small molecules across the membrane of Ehrlich ascites tumor cell. H. G. HEMPLING (intr. by J. MACLEOD). *Cornell Univ. Med. College.*

2:45 **449.** Cation-sensitive nucleoproteins in sea urchin egg and rat liver homogenates. P. R. GROSS, S. NASS* AND W. PEARL.* *New York Univ.*

3:00 **450.** Age studies of mean DNA per nucleus in rat liver. J. A. FALZONE, JR., C. H. BARROWS, JR. AND M. J. YIENGST (intr. by N. W. SHOCK). *Natl. Heart Inst. and Baltimore City Hosps.*

3:15 **451.** Photomicrographic densitometry of in vivo stratification in aging cells. F. J. WIERCINSKI. *Hahnemann Med. College and Drexel Inst. of Technology.*

3:30 **452.** Effect of 2,4-dinitrophenol (DNP) and ethylenediamine tetraacetic acid (EDTA) on sea-urchin spermatozoa. GERALD S. BERNSTEIN (intr. by ALBERT TYLER). *California Inst. of Technology.* (Immunol.)

3:45 **453.** Influence of viscosity on metachronal rhythm of cilia. ROBERT E. GOSSELIN. *Dartmouth Med. School.* (Pharmacol.)

Endocrines: Catechols, Steroids

TUES. P.M.—NURSES BLDG., ROOM 102

Chairman: Robert L. Noble

1:30 **454.** Effect of bacterial lipopolysaccharides on plasma catechol amine levels. M. H. HEIFFER, R. L. MUNDY AND L. J. E. GRIMM (intr. by A. V. WOLF). *Walter Reed Army Inst. of Research.*

1:45 **455.** Effect of surgical stress on excretion rate of urinary catechols. ALFRED A. SMITH,* JACK W. SCHWEITZER* AND S. BERNARD WORTIS. *New York Univ. College of Medicine.*

2:00 **456.** Metabolic involvements of epinephrine in uterine muscle extracts. MARIO A. INCHIOSA, JR. (intr. by THEODORE N. TAHMISIAN). *Argonne Natl. Lab.*

2:15 **457.** Norepinephrinemia during diethyl ether and cyclopropane anesthesia in man. H. L. PRICE, M. L. PRICE* AND R. E. JONES.* *Univ. of Pennsylvania.*

2:30 **458.** Islet hypertrophy in obesity, induced by corticosteroids. F. X. HAUSBERGER. *Jefferson Med. College.*

2:45 **459.** Metabolism of steroids in blood. L. R. AXELROD* AND N. T. WERTHESSEN. *Southwest Fndn. for Research and Education.*

3:00 **460.** Steroid hormones and cell growth. B. H. LEVEDAHL, D. E. BUETOW AND J. D. COLLINS (intr. by F. CRESCITELLI). *Univ. of California.*

3:15 **461.** In vivo conversion of 5-pregnene-3β-OL-20-one to plasma dehydroepiandrosterone (DHEA) and androsterone in the dog. GEORG W. OERTEL AND KRISTEN EIKNES (intr. by LEO T. SAMUELS). *Univ. of Utah College of Medicine.* (Pharmacol.)

3:30 **462.** Phagocytosis of carbon and E. coli by R. E. S. in diethylstilbestrol treated rats. HARRY J. ROBINSON AND OTTO E. GRAESSLE.* *Merck Inst. for Therapeutic Research.* (Pharmacol.)

3:45 **463.** Influence of alpha estradiol on skeletal tissue and radiocalcium metabolism of castrated male lambs. W. E. LOTZ AND C. L. COMAR (intr. by R. W. DOUGHERTY). *Univ. of Tennessee-AEC Agric. Research Program.*

Spinal Cord

TUES. P.M.—MILLS BLDG., ROOM 205

Chairman: Ernst Fischer

1:30 **464.** Relation between size of motor neurons and their susceptibility to discharge. ELWOOD HENNEMAN. *Harvard Med. School.*

1:45 **465.** Patterns of motor neuron response. JOHN M. BROOKHART AND XENIA MACHNE.* *Univ. of Oregon Med. School.*

2:00 **466.** Intracellular potential changes accompanying excitation of frog motor neurons. XENIA MACHNE, ETTORE FADIGA AND JOHN M. BROOKHART (intr. by A. TUNTURI). *Univ. of Oregon Med. School.*

2:15 **467.** Responses of single chromatolysed motoneurones. B. LIBET, J. C. ECCLES AND R. R. YOUNG. *Australian Natl. Univ.*

2:30 **468.** Analog study of neuron in volume conductor. A. J. MCALISTER (intr. by J. Z. HEARON). *Naval Med. Research Inst.*

2:45 **469.** Mathematical solutions for passive electrotonic spread between a neuron soma and its dendrites. WILFRID RALL. *Natl. Insts. of Health.*

3:00 **470.** Simultaneous measurements of somatic membrane current and potential in motoneurons. W. H. FREYGANG, JR. AND K. FRANK. *Natl. Insts. of Health.*

3:15 **471.** Cerebellar actions on activity of motoneurons recorded intracellularly. CARLO A. TERZUOLO (intr. by W. ROSS ADEY). *Univ. of California School of Medicine.*

Physiology Society Business Meeting

TUESDAY, 4:30 P.M.—CONVENTION HALL, BALLROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

Wednesday Morning, April 16, 9:00 a.m.

Connective Tissue, Collagen, Enzymes

WED. A.M.—CONVENTION HALL, ROOM A

Chairman: Nathan W. Shock

9:00 **472.** Composition of developing bone rudiments of the embryonic fowl. SYLVIA FITTON JACKSON (intr. by WALTER BAUER). *King's College, London, and Harvard Med. School.*

9:15 **473.** Enzyme patterns in developing connective tissue. J. FREDERICK WOESSNER, JR. AND ROBERT J. BOUCEK (intr. by STEPHEN W. GRAY). *Howard Hughes Med. Inst.*

9:30 **474.** Use of nucleohistone films at the air water interface for quantitative estimation of lupus erythematosis factor. JOHN D. ARNOLD AND CHARLES Y. C. PAK (intr. by ALF S. ALVING). *Univ. of Chicago.*

9:45 **475.** Neutral salt extractible components of skin of scorbutic guinea pigs. JEROME GROSS. *Harvard Med. School.*

10:00 **476.** Compensation for metabolic alkalosis in dogs. JOHNIE L. REEVES* AND E. B. BROWN, JR. *Univ. of Minnesota.*

10:15 **477.** Effect of serotonin on N,N-dimethyl-p-phenylenediamine oxidation by rabbit serum. M. H. APRISON, K. M. HANSON* AND D. C. AUSTIN.* *Indiana Univ. Med. Ctr.*

10:30 **478.** Histidine decarboxylase from rat peritoneal fluid mast cells. ADOLFO M. ROTHSCHILD* AND RICHARD W. SCHAYER. *Rheumatic Fever Research Inst.*

Peripheral Circulation II

WED. A.M.—CONVENTION HALL, ROOM B

Chairman: William F. Hamilton

9:00 **479.** Relation between lymphatic pressure and venous pressure. AYA IRISAWA (intr. by NEWTON B. EVERETT). *Univ. of Washington.*

9:15 **480.** Venous pressure changes following sudden occlusion of ascending aorta or pulmonary artery in anesthetized cats and dogs. H. J. BARTELSTONE, R. P. BIRCHER AND P. BRAZEAU (intr. by S. C. WANG). *Columbia Univ.*

9:30 **481.** Action of chemoreflexes on venous tone. DONALD P. MCKIBBIN* AND ROBERT S. ALEXANDER. *Albany Med. College.*

9:45 **482.** Direct recording of diameter of vena cava in intact dogs. HIROSHI IRISAWA (intr. by LOWELL WOODBURY). *Univ. of Washington.*

10:00 **483.** Function of liver and spleen as venous reservoirs. WARREN G. GUNTHEROTH (intr. by EDWARD A. BOYDEN). *Univ. of Washington.*

10:15 **484.** Peripheral vasoconstriction associated with hyperpotassemia. FREDERICK N. SUDAK* AND GEORGE P. FULTON. *Boston Univ.*

10:30 **485.** Blood supply of the femur. ADRIAN C. KUYPER AND J. FRANKEL.* *Wayne State Univ. College of Medicine.* (Biochem).

10:45 **486.** Quantitative determination of cross circulation in parabiotic rats with P^{32} labeled erythrocytes. DAVIS G. FLEMING, LAURA CALDWELL AND ROBERTA JACOBS (intr. by O. O. STOLAND). *Univ. of Kansas.*

11:00 **487.** Impaired clearance of Na^{24} from liver tissue following circulatory stasis. M. DON TURNER,* JAMES D. HARDY AND WILLIAM O. BARNETT.* *Univ. of Mississippi Med. Ctr.*

11:15 **488.** Nature and rates of excretion of radioactive breakdown products of I^{131}-albumin in rabbits. F. ZIZZA, T. J. CAMPBELL AND E. B. REEVE (intr. by J. W. GERSTEN). *Univ. of Colorado School of Medicine.*

11:30 **489.** Comparative potentiating action of various steroids on contraction of vascular smooth muscle. DAVID F. BOHR AND GEORGE CUMMINGS.* *Univ. of Michigan.*

Muscle: Physical Elementary Processes

WED. A.M.—CONVENTION HALL, ROOM C

Chairman: C. Ladd Prosser

9:00 **490.** Reduction of elastic modulus of skeletal muscle during activity. A. S. GILSON. *Washington Univ. School of Medicine.*

9:15 **491.** Changes in muscle permeability to aldolase produced by altered metabolism and altered polarization. KENNETH L. ZIERLER. *Johns Hopkins Univ.*

9:30 **492.** Multiple motor innervation of skeletal muscle fibers in Anolis cristatellus.

J. SZEPSENWOL. *Univ. of Puerto Rico School of Medicine.*

9:45 **493.** Fixed charge induction hypothesis for biological transmitter, amplifier and "mixer" at the molecular level. GILBERT LING. *Eastern Pennsylvania Psychiatric Inst.*

10:00 **494.** Action potential of frog muscle treated with a trace metal chelating agent. HOWARD JENERICK (intr. by W. S. MCCULLOCH). *Massachusetts Inst. of Technology.*

10:15 **495.** Transmembrane potentials in isolated non-pregnant guinea pig uteri. J. M. MARSHALL AND S. KATSH. *Johns Hopkins Univ. School of Medicine and Carnegie Inst. of Washington.*

10:30 **496.** Electrical activity of rabbit uterine muscle monitored by implanted electrodes. C. Y. KAO. *State Univ. of New York Med. Ctr.*

10:45 **497.** Nervous control of a molluscan smooth muscle. B. M. TWAROG (intr. by J. H. WELSH). *Harvard Univ.*

11:00 **498.** Effects of stretch and NaCl on transmembrane potentials and tension of pregnant rat uterus. M. GOTO AND J. W. WOODBURY (intr. by H. S. BENNETT). *Univ. of Washington.*

11:15 **499.** Electrical changes in longitudinal myometrium from pregnant cat during spontaneous contractions with variation of external sodium concentrations. EDWIN E. DANIEL AND HARCHARAN SINGH (intr. by J. G. FOULKS). *Univ. of British Columbia.* (Pharmacol.)

11:30 General discussion.

Renal Circulation, Renal Transport

WED. A.M.—CONVENTION HALL BALLROOM

Chairman: William D. Blake

9:00 **500.** Tracer studies on renal medullary circulation. J. B. LONGLEY, N. A. LASSEN AND L. S. LILIENFIELD (intr. by S. S. SPICER). *Natl. Insts. of Healt, and Georgetown Univ. Med. Ctr.*

9:15 **501.** Blood and interstitial spaces of functional kidney. W. D. COLLINGS AND H. G. SWANN. *Univ. of Texas Med. School.*

9:30 **502.** Attempt to visualize a renal interstitial space. H. G. SWANN, J. G. SINCLAIR* AND M. V. PARKER.* *Univ. of Texas Med. School.*

9:45 **503.** Kidney oxygen tensions; relation to intrarenal blood distribution. D. W. RENNIE,* R. B. REEVES* AND J. R. PAPPENHEIMER. *Harvard Med. School.*

10:00 **504.** Acute effects of renal arterial constriction on renal carbon dioxide production and excretion. M. AVEDON,* D. H. SIMMONS AND N. S. ASSALI.* *VA Ctr. and Univ. of California Med. Ctr.*

10:15 **505.** Effect of serotonin on renal vascular resistance and urine flow rate. D. A. EMANUEL, J. SCOTT, R. COLLINS AND F. J. HADDY (intr. by A. D. KELLER). *Army Med. Research Lab., Fort Knox.*

10:30 **506.** Influence of urinary ionic strength on phosphate pK'_2 and on measurement of titratable acidity. NORMAN BANK,* ROBERT W. P. CUTLER* AND WILLIAM B. SCHWARTZ. *Tufts Univ.*

10:45 **507.** Ion activities in kidney brei. SIDNEY SOLOMON AND LEWIS D. HOMER (intr. by E. HUF). *Med. College of Virginia.*

11:00 **508.** Role of potassium in PAH accumulation by kidney cells. ERNEST C. FOULKES (intr. by Z. B. MILLER). *Jewish Hosp. and Univ. of Cincinnati College of Medicine.* (Biochem.)

11:15 **509.** Electrical potential measurements on single nephrons of Necturus. GERHARD GIEBISCH (intr. by DAVID D. THOMPSON). *Cornell Univ. Med. College.*

Respiration Mechanics

WED. A.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: John F. Perkins, Jr.

9:00 **510.** Concepts and problems concerning respiration mechanics. JOHN F. PERKINS, JR. *Univ. of Chicago.*

9:30 **511.** Acute effects of inhaling particulate matter on mechanics of breathing in man. ARTHUR B. DUBOIS, RAPHAEL ALCALA, JR.* AND LUCIEN DAUTREBANDE.* *Univ. of Pennsylvania Grad. School of Medicine.*

9:45 **512.** Reassessment of respiratory mechanics in cats after sham operation, abdominal muscle section, evisceration and hepatectomy. ALFRED W. BRODY, JOHN J. CONNOLLY, JR.* AND HARRY J. WANDER.* *Creighton Med. School and St. Joseph's Hosp., Omaha.*

10:00 **513.** Simplified method for pulmonary resistance. JOHN A. CLEMENTS, JOHN T. SHARP AND RUDOLPH P. JOHNSON (intr. by D. B. DILL). *USA Chemical Warfare Labs.*

10:15 **514.** Effect of cooling cervical vagi on work of breathing. FRED ZECHMAN,* JOHN SALZANO* AND F. G. HALL. *Duke Univ. School of Medicine.*

10:30 **515.** Functional residual capacity and

elastic properties of lungs after vagotomy. THOMAS P. K. LIM* AND ULRICH C. LUFT. *Lovelace Fndn., Albuquerque.*

10:45 **516.** Regulation of respiration during heavy exercise. J. H. MITCHELL, B. J. SPROULE AND C. B. CHAPMAN (intr. by A. GROLLMAN). *Univ. of Texas Southwestern Med. School.*

11:00 **517.** Breath holding during exercise. F. N. CRAIG AND E. G. CUMMINGS.* *USA Chemical Warfare Labs.*

11:15 **518.** Effect of shallow and deep breathing on pulmonary compliance. B. G. FERRIS, JR. AND D. POLLARD.* *Harvard School of Public Health.*

11:30 **519.** Effect of acceleration on pulmonary compliance. STUART BONDURANT (intr. by J. WILLIAM HEIM). *Aero Med. Lab., WADC, Wright-Patterson AFB.*

11:45 **520.** Maximum expiratory flow-volume curve. R. E. HYATT, D. P. SCHILDER AND D. L. FRY (intr. by R. P. AKERS). *Natl. Heart Inst.*

Insulin, Carbohydrate Metabolism

WED. A.M.—NURSES BLDG., ROOM 102

Chairman: Charles H. Best

9:00 **521.** Direct demonstration of insulin release from the pancreas by tolbutamide. FREDERICK C. GOETZ AND RICHARD H. EGDAHL (intr. by G. T. EVANS). *Univ. of Minnesota.*

9:15 **522.** Tolbutamide and onset of alloxan diabetes in rats. JOHN E. KLIMAS, JR. AND GORDON W. SEARLE (intr. by J. D. THOMSON). *State Univ. of Iowa.*

9:30 **523.** Effect of high blood sugar levels upon the hepatic sugar output in experimental diabetes. BELA ISSEKUTZ, JR. (intr. by E. J. FELLOWS). *Univ. of Steged, Hungary, and Univ. of Greifswald, Germany.* (Pharmacol.)

9:45 **524.** Ketogenic action of cortisone in the diabetic rat. R. O. SCOW, S. S. CHERNICK* and B. A. GUARCO*. *Natl. Insts. of Health.*

10:00 **525.** Carbohydrate metabolism and insulin hypersensitivity in adrenalectomized dogs; studies with C^{14} glucose. N. ALTSZULER*, R. STEELE*, A. DUNN*, J. S. WALL* AND R. C. DE BODO. *New York Univ. College of Medicine and Brookhaven Natl. Lab.*

10:15 **526.** Influence of insulin on protein metabolism and cardiac glycogen in Houssay animals. F. D. W. LUKENS. *Univ. of Pennsylvania.*

10:30 **527.** Hexosemonophosphate shunt dehydrogenases and hepatic fatty acid synthesis. JAY TEPPERMAN AND HELEN M. TEPPERMAN. *State Univ. of New York Upstate Med. Ctr.*

10:45 **528.** Influence of glucagon on protein metabolism of fasting rats. JOSEPH L. IZZO AND STANLEY R. GLASSER (intr. by T. R. NOONAN). *Univ. of Rochester School of Medicine.*

11:00 **529.** Effects of insulin added in vitro on the metabolism of glucose-1-C^{14} and glucose-6-C^{14} by rat adipose tissue. ALBERT I. WINEGRAD*, ALBERT E. RENOLD AND BERNARD JEANRENAUD*. *Harvard Med. School.*

11:15 **530.** Uptake of acetoacetic acid and glucose by skeletal muscle of rats. C. H. BEATTY, R. M. BOCEK* AND E. S. WEST*. *Univ. of Oregon Med. School.*

11:30 **531.** Inhibition of glucose uptake by acidosis in vitro. TERENCE A. ROGERS (intr. by W. O. FENN). *Univ. of Rochester School of Medicine.*

11:45 **532.** Effect of exercise on glucose utilization. JEAN P. CHRISTOPHE* AND JEAN MAYER. *Harvard School of Public Health.*

12:00 **533.** Glycogen metabolism in the isolated liver. J. E. SOKAL, L. L. MILLER AND E. J. SARCIONE (intr. by J. L. AMBRUS). *Roswell Park Memorial Inst. and Univ. of Rochester School of Medicine.*

Sensory Physiology I

WED. A.M.—MILLS BLDG., ROOM 205

Chairman: Hallowell Davis

9:00 **534.** Auditory stimulation: alternating magnetic fields acting on a permanent magnet fixed to the eardrum. J. RUTSCHMANN, H. J. PAGE AND E. P. FOWLER, JR. (intr. by CARNEY LANDIS). *Columbia Univ.*

9:15 **535.** Action of middle ear muscles in normal cats. ROBERT GALAMBOS AND ALLEN RUPERT.* *Walter Reed Army Inst. of Research.*

9:30 **536.** Function of auditory cortex of cat in frequency discrimination. RICHARD F. THOMPSON (intr. by K. AKERT). *Univ. of Wisconsin.*

9:45 **537.** Frequency discrimination after ablation of cortical projection areas of the auditory system. JAY M. GOLDBERG,* IRVING T. DIAMOND* AND W. D. NEFF. *Univ. of Chicago.*

10:00 **537a.** Human auditory reflexes. E. S. MENDELSON. *Naval Air Materiel Ctr., Philadelphia.*

10:15 **538.** Some cerebellar influences on evoked cerebral auditory response. R. S. SNIDER AND K. SATO.* *Northwestern Univ. Med. School.*

10:30 **539.** Neural correlates of echolocation

in bats. DONALD R. GRIFFIN AND ALAN D. GRINNELL.* *Harvard Univ.*

10:45 **540.** Adaptation to pain. L. C. GREENE,* J. C. ALDEN* AND J. D. HARDY. *Aviation Med. Acceleration Lab., and Univ. of Pennsylvania.*

11:00 **541.** Human odor panel and olfactory theory. JAMES W. JOHNSTON, JR. (intr. by C. F. MORGAN). *Georgetown Univ.*

11:15 **542.** Tactile responses of chemosensory hairs in phormia. MYRON L. WOLBARSHT* AND VINCENT G. DETHIER. *Johns Hopkins Univ.*

11:30 **543.** Effect of odor flow rate on olfactory response. LLOYD M. BEIDLER. *Florida State Univ.*

11:45 **544.** Nature of the inter-olfactory bulb system. RAYMOND R. WALSH (intr. by CLARENCE A. MAASKE). *Univ. of Colorado School of Medicine.*

Federation Office

Room 305, Convention Hall
Rooms 216–217, Bellevue-Stratford Hotel

Exhibits—Inspection Periods

Monday through Thursday: 9 A.M. to 5 P.M.
Friday: 9 A.M. to 1 P.M.

Placement Service

Center Building, Convention Hall

Lost and Found

Federation Office, Room 305, Convention Hall

Wednesday Afternoon, April 16, 1:30 p.m.

Renal Function: General

WED. P.M.—CONVENTION HALL, ROOM A

Chairman: James A. Shannon

1:30 **545.** Conditioned reflex studies on renal function. SAMUEL A. CORSON, ROSCOE A. DYKMAN,* ELIZABETH O'LEARY CORSON,* JOHN E. PETERS,* LLOYD D. SEAGER* AND WILLIAM G. REESE.* *Univ. of Arkansas School of Medicine.*

1:45 **546.** Changes in renal function during induced apnea of diffusion respiration. V. C. BOHR, R. J. RALLS* AND R. E. WESTERMEYER.* *College of Med. Evangelists.*

2:00 **547.** Active transport of endogenous and exogenous bases in the aglomerular kidney of Lophius. ROY P. FORSTER, FREDRIK BERGLUND* AND BARBARA R. RENNICK. *Dartmouth College, Boston Univ. School of Medicine, State Univ. of New York College of Medicine and Mt. Desert Island Biological Lab.*

2:15 **548.** Cellular hydration and intrarenal regulation of glomerular filtration rate. WILLIAM D. BLAKE. *Univ. of Oregon Med. School.*

2:30 **549.** In vitro amino acid metabolism of tissues from a mouse mutant showing differential patterns of amino acid excretion. REBA M. GOODMAN (intr. by I. J. DEYRUP). *Barnard College and Columbia Univ.*

2:45 **550.** Active uptake of urea by mammalian kidney slices. ROBERTA M. O'DELL* AND BODIL SCHMIDT-NIELSEN. *Duke Univ.*

3:00 **551.** Dialysis of urea in a parallel tube blood dialyzer. J. E. DOYLE, A. E. MACNEILL, S. ANTHONE AND R. ANTHONE (intr. by G. F. KOEPF). *Med. Fndn. and Univ. of Buffalo.*

3:15 **552.** Ammonia production in acidotic and alkalotic dogs. F. C. RECTOR, JR.* AND JACK ORLOFF. *Natl. Heart Inst.*

3:30 **553.** Mitosis stimulating factor in serum of unilaterally nephrectomized rats. KAZUO OGAWA* AND WIKTOR W. NOWINSKI. *Univ. of Texas Med. Branch.*

3:45 **554.** Iodine-reactive substances in human urine. JOSEPH J. PAVELEK,* NATHAN MILLMAN AND FRED ROSEN. *Ortho Research Fndn.*

4:00 **555.** Development of an isolated perfused mammalian kidney. SHELDON ROSENFELD,* ALVIN L. SELLERS, JOSEPH KATZ* AND JESSIE MARMORSTON.* *Cedars of Lebanon Hosp. and Univ. of Southern California.*

4:15 **556.** Osmotic activity of renal papillae of dogs during formation of hypertonic urine. JOHANNES W. T. APPELBOOM* AND WILLIAM A. BRODSKY. *Univ. of Louisville School of Medicine.*

Gastrointestinal: Stomach, Liver, Bile, Pancreas

WED. P.M.—CONVENTION HALL, ROOM B

Chairman: Heinrich Necheles

1:30 **557.** Alkaline phosphatase in vascular and nervous elements in gastric lesions caused by hydrocarbon carcinogens and by beryllium. RHODA GRANT. *Univ. of Illinois College of Medicine.*

1:45 **558.** Function of the stomach in relation to lymph transport of fed glyceride and fatty acid. ALFRED J. RAMPONE (intr. by HANCE F. HANEY). *Univ. of Oregon Med. School.*

2:00 **559.** Proliferation of the liver reticuloendothelial system. LOLA S. KELLY. *Donner Lab., Univ. of California.*

2:15 **560.** Hepatic vein pressures and liver function. RALPH W. BRAUER, ROY J. HOLLOWAY* AND GEORGE F. LEONG.* *U. S. Naval Radiological Defense Lab.* (Pharmacol.)

2:30 **561.** Renal function and electrolyte excretion in patients with cirrhosis of the liver. DANIEL R. SHIELDS, JR.,* STEPHEN H. LESLIE* AND HERBERT GERSHBERG. *College of Medicine, New York Univ.-Bellevue Med. Ctr.*

2:45 **562.** Effect of interrupting the enterohepatic circulation upon bile composition of the rat. HARRY L. LIGHT,* C. WITMER* AND H. M. VARS. *Univ. of Pennsylvania Schools of Medicine.* (Biochem.)

3:00 **563.** Influence of cortisone and hydrocortisone on bile secretion. J. H. GANS,* M. H. F. FRIEDMAN AND W. J. SNAPE. *Jefferson Med. College.*

3:15 **564.** Obligatory function of continuing flow of bile for cholesterol ester absorption in the rat. RYUTA SUZUKI AND C. RAM PRASAD (intr. by D. NELSON). *Univ. of Illinois College of Medicine.*

3:30 **565.** Effect of ferric chloride on choles-

terol metabolism. ESKO KARVINEN (intr. by L. A. CRANDALL, JR.). *Univ. of Illinois College of Medicine.*

3:45 **566.** Activation of pancreatic protease. MORTON I. GROSSMAN. *VA Ctr. and Univ. of California Med. Ctr.*

4:00 **567.** Effect of insulin and feeding on pancreatic secretion in the rat. R. S. ALPHIN* AND T. M. LIN. *Eli Lilly Research Labs.*

4:15 **568.** Pancreatic insufficiency in the rat. J. A. URAM,* L. FRIEDMAN* AND O. L. KLINE. *Food and Drug Admin.* (Nutr.)

Hypoxia, Emphysema

WED. P.M.—CONVENTION HALL, ROOM C

Chairman: Theodore G. Bernthal

1:30 **569.** Etiology of hypoxia in chronic restrictive lung disease. HURLEY L. MOTLEY. *Univ. of Southern California.*

1:45 **570.** Comparison of acid-base balance and respiratory response to CO_2 during altitude acclimatization. RALPH H. KELLOGG, DONAL J. REED* AND ARTHUR R. TODD*. *Univ. of California and White Mountain Research Station.*

2:00 **571.** Myoglobin and hemoglobin levels in human and rat muscle. JAMES P. ELLIS, JR.* AND ROBERT T. CLARK. *School of Aviation Medicine, USAF.*

2:15 **572.** Heart rate during muscular work in man exposed to prolonged hypoxia. PER-OLOF ÅSTRAND AND IRMA ÅSTRAND (intr. by NELLO PACE). *Univ. of California and White Mountain Research Station.*

2:30 **573.** Action of chlorpromazine on respiratory response to hypoxia. ROBERT T. SCHOPP (intr. by RICHARD W. WHITEHEAD). *Univ. of Colorado Med. Ctr.*

2:45 **574.** Effect of hypoxia and nitrous oxide on uterus of estrogenized dogs. EDWARD J. VAN LIERE AND DAVID W. NORTHUP. *West Virginia Univ. Med. Ctr.*

3:00 **575.** Correlation between uneven ventilation of lung and arterial saturation in emphysema. W. A. BRISCOE, E. M. CREE,* J. FILLER* AND H. E. J. HOUSSAY.* *Columbia Univ., Bellevue Hosp.*

3:15 **576.** "Partitional respirometry" in normal and emphysematous subjects. ROY J. SHEPHARD (intr. by ROBERT A. KEHOE). *Univ. of Cincinnati.*

3:30 **577.** Longitudinal studies in emphysema: comparison of estimation of timed and total vital capacity. JOSEPH V. HAMMEL,* MILTON B. COLE,* VITUS W. MANGINELLI* AND ALFRED H. LAWTON. *VA Ctr., Bay Pines, Fla.*

3:45 **578.** Oxygen cost of muscular exercise in emphysema. GILES F. FILLEY. *Univ. of Colorado Med. Ctr.*

Hypertension, Blood Pressure

WED. P.M.—CONVENTION HALL, BALLROOM

Chairman: John W. Remington

1:30 **579.** Urinary excretion of epinephrine, norepinephrine and 5-hydroxyindoleacetic acid (5-HIAA) in essential hypertension. EUGENE A. CONRAD,* J. MAXWELL LITTLE AND ARCHIE H. CARMICHAEL.* *Bowman Gray School of Medicine.*

1:45 **580.** Relationship of time of uninephrectomy to course of desoxycorticosterone induced hypertension. C. E. HALL AND O. HALL.* *Univ. of Texas Med. Branch.*

2:00 **581.** Effects of transplantation of regenerating adrenals on adrenal regeneration hypertension. J. J. CHART,* GLORIA MILLER ULSAMER,* LOUISE QUINN* AND ROBERT GAUNT. *Ciba Pharmaceutical Products.*

2:15 **582.** Anti-hypertensive effect of hypophysectomy in dogs hypertensive following bilateral carotid sinus constriction (BCSC). MARY GASPAR, EDWARD W. HAWTHORNE, WILLIAM G. POGUE AND SHERIDAN L. C. PERRY (intr. by E. G. WEIR). *Howard Univ. College of Medicine.*

2:30 **583.** Hypertension produced by carotid sinus area constriction in dogs. H. L. MCCROREY,* E. J. SUKOWSKI,* K. T. THOMPSON* AND G. E. WAKERLIN. *Univ. of Illinois College of Medicine.*

2:45 **584.** Hypertensive factor in rat pineal gland. ENRIQUE SANTAMARINA* AND HAROLD S. WEISS. *Rutgers Univ.*

3:00 **585.** Dietary protein and hypertension of dog: protection by uretero-caval anastomosis and ureteral ligation. E. E. MUIRHEAD, J. A. STIRMAN* AND F. JONES.* *Univ. of Texas Southwestern Med. School.*

3:15 **586.** Production of experimental hypertension with licorice and ammoniated glycyrrhizin. R. J. GIRERD,* C. L. RASSAERT,* G. DI PASQUALE* AND R. L. KROC. *Warner-Chilcott Labs.*

3:30 **587.** Cigarette smoking, serum cholesterol and blood pressure. ESKO ORMA,* MARTTI KARVONEN,* ANCEL KEYS AND JOSEF BROZEK. *Univ. of Minnesota.*

3:45 **588.** Evidence for abdominal pressoreceptors with special reference to the pancreas.

S. J. SARNOFF AND S. I. YAMADA.* *Natl. Heart Inst.*

4:00 **589.** Lack of normal rise in blood pressure with age in chickens deprived of choline early in life. I. J. LICHTON (intr. by CLARENCE COHN). *Michael Reese Hosp.*

4:15 **590.** Relationship between mean pressure and *g*-time pattern during positive acceleration. GEORGE KYDD, RICHARD FENICHEL AND RICHARD CROSBIE (intr. by RICHARD LAWTON). *U.S. Naval Air Development Ctr.*

4:30 **591.** Blood pressure of the bone marrow. EDWARD HERZIG* AND WALTER S. ROOT. *Columbia Univ.*

Effects of Cold, Shivering

WED. P.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: Austin F. Henschel

1:30 **592.** Energy metabolism of cold-exposed rats during anesthesia. A. KURT WEISS. *Univ. of Miami School of Medicine and Howard Hughes Med. Inst.*

1:45 **593.** Neuromuscular impairment following cooling of rabbit's leg in water at 2°C. DONALD SCOTT, JR., ANN SAYEN* AND HUGH MONTGOMERY. *Univ. of Pennsylvania.*

2:00 **594.** Effect of continuous cold exposure on nocturnal body temperatures of man. M. B. KREIDER, P. F. IAMPIETRO, E. R. BUSKIRK AND DAVID E. BASS (intr. by AUSTIN HENSCHEL). *QM R & D Command, Natick, Mass.*

2:15 **595.** A comparison of certain methods for assessing adrenocortical activity in rats briefly exposed to cold. E. SCHÖNBAUM, ROSEMARY E. LARGE, MONICA DAVIDSON AND W. G. BRUCE CASSELMAN (intr. by E. BAER). *Univ. of Toronto, Canada.* (Biochem.)

2:30 **596.** Effect of exposure to cold on coenzyme A content of liver tissue. JAMES CAMPBELL, G. R. GREEN,* E. SCHÖNBAUM AND HARVEY SOCOL.* *Univ. of Toronto, Canada.*

2:45 **597.** Comparison of relative cooling rates of aqueous and adipose tissues. G. W. MOLNAR. *U. S. Army Med. Research Lab., Fort Knox.*

3:00 **598.** Weight cycle and hibernation in Tamias striatus. JOSEPH A. PANUSKA* AND NELSON J. WADE. *Woodstock College and St. Louis Univ.*

3:15 **599.** Freeze-drying in the study of ice formation. J. K. SHERMAN (intr. by R. K. MEYER). *Amer. Fndn. for Biological Research.*

3:30 **600.** Shivering and non-shivering thermogenesis in man. T. R. A. DAVIS, D. R. JOHNSTON AND F. C. BELL (intr. by J. R. BLAIR). *U. S. Army Med. Research Lab., Fort Knox.*

3:45 **601.** Oxygen uptake of tissue and disappearance of shivering activity. B. CREMER, D. JOHNSTON, T. DAVIS, F. BELL AND R. JASPER (intr. by W. A. HIESTAND). *U. S. Army Med. Research Lab., Fort Knox.*

4:00 General discussion.

Brain Stem, Mid-Brain

WED. P.M.—MILLS BLDG., ROOM 205

Chairman: John M. Brookhart

1:30 **602.** Concepts and problems concerning the brainstem and mid-brain. JOHN M. BROOKHART. *Univ. of Oregon School of Medicine.*

2:00 **603.** Eye and head posture in lesions of brainstem. IRVING H. WAGMAN, STEFAN SHANZER* AND MORRIS B. BENDER. *Mt. Sinai Hosp., New York City.*

2:15 **604.** Rhythmicity of breathing—a study with extracellular microelectrodes. G. C. SALMOIRAGHI* AND B. DELISLE BURNS. *McGill Univ., Canada.*

2:30 **605.** Influence of hypothalamic excitability on medullary respiratory center. E. S. REDGATE (intr. by IRVING ROTHCHILD). *Western Reserve Univ.*

2:45 **606.** Effect of drug and diet on hypothalamic hyperphagic rats. J. A. F. STEVENSON, DONALD G. MONTEMURRO* AND LEE L. BERNARDIS.* *Univ. of Western Ontario.*

3:00 **607.** Regulation of depth and duration of apneustic breathing. PEI CHIN TANG. *School of Aviation Medicine, USAF.*

3:15 **608.** Effects of pneumotaxic center stimulation on the respiratory cycle. MORTIN I. COHEN (intr. by W. W. DOUGLAS). *Albert Einstein College of Medicine.*

3:30 **609.** Brain stem lesions affecting secretion of aldosterone and hydrocortisone. ANNA E. NEWMAN,* EDWARD S. REDGATE,* FRANK M. YATSU* AND GORDON L. FARRELL. *Western Reserve Univ.*

3:45 **610.** Chronic reticular and lemniscal lesions in cats. JAMES M. SPRAGUE, WILLIAM W. CHAMBERS, ELIOT STELLAR* AND C. N. LIU.* *Univ. of Pennsylvania.*

4:00 **611.** Behavior of cats with chronic reticular and lemniscal lesions. ELIOT STELLAR, WILLIAM W. CHAMBERS, C. N. LIU AND JAMES M. SPRAGUE (intr. by L. B. FLEXNER). *Univ. of Pennsylvania.*

4:15 **612.** Catatonia induced by chronic stimulation of the striatum. E. A. SPIEGEL AND E. G. SZEKELY*. *Temple Univ. School of Medicine.*

Thursday Morning, April 17, 9:00 a.m.

Ion Transport

THURS. A.M.—CONVENTION HALL, ROOM A

Chairman: Wallace O. Fenn

9:00 **613.** Concepts and problems concerning ion transport. WALLACE O. FENN. *Univ. of Rochester School of Medicine.*

9:30 **614.** Frog skin current dependence on K concentration. T. HOSHIKO (intr. by H. GOLDBLATT). *Univ. of Copenhagen and Western Reserve Univ.*

9:45 **615.** Effect of ammonium derivatives on ion flux in electroplax. E. SCHOFFENIELS (intr. by D. NACHMANSOHN). *Columbia Univ.* (Biochem.)

10:00 **616.** Ion fluxes during action potential in chara. C. T. GAFFEY* AND L. J. MULLINS. *Purdue Univ.*

10:15 **617.** Effect of cocaine on sodium and potassium fluxes in toad sciatic nerve. A. M. SHANES. *Natl. Insts. of Health.*

10:30 **618.** Cationic fluxes in skeletal muscle exposed to acid. R. C. SWAN AND R. J. KOSSMANN*. *Cornell Med. College.*

10:45 **619.** Sodium, chloride and water transport by isolated rat ileum in vitro. PETER F. CURRAN AND A. K. SOLOMON (intr. by JOSEPH C. AUB). *Harvard Med. School.*

11:00 **620.** Electrolyte and water transport across the small intestine of the rat. T. W. CLARKSON* AND A. ROTHSTEIN. *Univ. of Rochester School of Medicine.*

11:15 **621.** Histological composition of developing guinea pig liver estimated by morphological and chemical methods. VIRGINIA B. PETERS, LOUIS B. FLEXNER AND JOSEFA B. FLEXNER (intr. by GEORGE O. GEY). *Univ. of Pennsylvania Med. School.*

11:30 **622.** Effect of drugs on active transport mechanisms. CLIFFORD S. PATLAK (intr. by JULIAN TOBIAS). *Univ. of Chicago.*

11:45 **623.** Action of mercury on electrolyte permeability of the yeast cell. H. PASSOW AND A. ROTHSTEIN (intr. by H. A. BLAIR). *Univ. of Rochester School of Medicine.*

Blood Flow

THURS. A.M.—CONVENTION HALL, ROOM B

Chairman: A. Clifford Barger

9:00 **624.** A pulsed ultrasonic flowmeter. DEAN K. FRANKLIN AND R. M. ELLIS (intr. by J. W. STUTZMAN). *Univ. of Washington.*

9:15 **625.** Evaluation of the dilution principle for measuring flow and volume during acceleration. C. A. CHIDSEY, III,* H. W. FRITTS, JR.,* P. HARRIS* AND A. COURNAND. *Columbia Univ.*

9:30 **626.** Local factors in regulation of tissue blood flow. B. W. ZWEIFACH. *New York Univ.-Bellevue Med. Ctr.*

9:45 **627.** Circulatory responses to interruption and reestablishment of blood flow. RAYMOND C. READ, HIROSHI KUIDA AND JOHN A. JOHNSON (intr. by C. MARTINEZ). *Univ. of Minnesota.*

10:00 **628.** Determination of blood flow to hand with radiopotassium. LEO A. SAPIRSTEIN. *Ohio State Univ.*

10:15 **629.** Effect of blocking agents on blood flow through the mandibular artery. J. LESTER MATTHEWS,* JACK G. BISHOP AND HOMER L. DORMAN.* *Baylor Univ. College of Dentistry.*

10:30 **630.** Influence of sympathetic nervous system on vascular responses to physiologic stimuli in man. WALTER REDISCH, KURT DECRINIS,* AURORA ANTONIO* AND J. MURRAY STEELE. *New York Univ. College of Medicine and Goldwater Memorial Hosp.*

10:45 **631.** Limb blood flow during recovery from moderate exercise. ROBERT W. ELSNER* AND LOREN D. CARLSON. *Univ. of Washington.*

11:00 **632.** Venous blood flow recorded with an isothermal flowmeter. STEFAN MELLANDER (intr. by LUCIEN MORRIS). *Univ. of Washington.* (Pharmacol.)

11:15 **633.** Uterine blood flow in unanesthetized pregnant sheep. JAMES METCALFE, WILLIAM E. HUCKABEE, HARRY PRYSTOWSKY, ANDRE HELLEGERS, GIACOMO MESCHIA, STARK WOLKOFF AND DONALD H. BARRON (intr. by DAVENPORT HOOKER). *Harvard Univ., Boston Univ., Johns Hopkins Univ. and Yale Univ.*

11:30 **634.** Variability and control of blood and plasma viscosity in rats. JOSEPH W. STILL

AND MELVIN H. HEIFFER.* *George Washington Univ. College of Medicine.*

11:45 **635.** Mechanically induced changes in components of pulse waves in dorsalis pedis and radial arteries. RICHARD B. SHEPARD (intr. by WILLIAM S. BLAKEMORE). *Univ. of Pennsylvania Schools of Medicine.*

General Physiology, Blood

THURS. A.M.—CONVENTION HALL, ROOM C

Chairman: Edward F. Adolph

9:00 **636.** Carbon dioxide fixation by the oyster. CARL S. HAMMEN* AND KARL M. WILBUR. *Duke Univ.*

9:15 **637.** Septicemic, cutaneous ulcerative disease of laboratory turtles. HAROLD M. KAPLAN. *Southern Illinois Univ.*

9:30 **638.** Nematocysts of *Physalia*. ELEANOR DODGE* AND CHARLES E. LANE. *Univ. of Miami.*

9:45 **639.** Basic data on emergence of permanent teeth in the monkey. V. O. HURME* AND G. VAN WAGENEN. *Yale Univ. School of Medicine.*

10:00 **640.** Chemically-induced loss of regenerative capacity in hydra. RICHARD G. HAM (intr. by JOANNE M. RAVEL). *Univ. of Texas, Austin.* (Biochem).

10:15 **641.** Adaptive responses to damage. WILLIAM F. SEIP* AND FREDERICK W. BARNES, JR. *Johns Hopkins Univ. School of Medicine.* (Biochem.)

10:30 **642.** Leucocyte release from isolated perfused hind limbs of rats. BURTON S. DORNFEST, ALBERT S. GORDON AND NAOMI GOTTLIEB (intr. by H. A. CHARIPPER). *New York Univ. Grad. School of Arts and Science.*

10:45 **643.** Chemical nature of mucopolysaccharides extracted from blood platelets. T. T. ODELL, JR. AND BONNIE ANDERSON.* *Oak Ridge Natl. Lab.*

11:00 **644.** Random blood glucose levels among women. DOROTHY MACY, JR., MARY E. FRANK AND FRIEDA BAUMANN (intr. by ROBERTA HAFKESBRING). *Woman's Med. College of Pennsylvania.*

Pituitary

THURS. A.M.—CONVENTION HALL, BALLROOM

Chairman: George Sayers

9:00 **645.** Skeletal muscle fiber diameters in normal adult and pituitary giant female rats. J D. EMERSON AND G. M. EMERSON.* *Univ. of Alabama Med. Ctr.*

9:15 **646.** Cardiac output of adult female rats during period of maximum response to a growth hormone containing pituitary extract. A. L. SIEGEL AND J. D. EMERSON (intr. by J. M. BRUHN). *Univ. of Alabama Med. Ctr.*

9:30 **647.** Dosage-response curve for assay of pituitary erythropoietic factor. LAWSON L. ROSENBERG*, ALEX N. CONTOPOULOS* AND M. E. SIMPSON. *Univ. of California.*

9:45 **648.** Hypotensive action of pitressin in hypophysectomized animals. HIRAM E. ESSEX. *Mayo Clin. and Mayo Fndn.*

10:00 **649.** Pitressin and blood ACTH. PAUL C. ROYCE* AND GEORGE SAYERS. *Western Reserve Univ. School of Medicine.*

10:15 **650.** Endogenous and exogenous vasopressin on ACTH release. B. NICHOLS, JR.*, R. GUILLEMIN* AND R. A. SEIBERT. *Baylor Univ. College of Medicine.* (Pharmacol.)

10:30 **651.** Fractionation of anterior pituitary gonadotropin by continuous electrophoresis. R. W. PAYNE, C. CAHILL* AND M. R. SHETLAR* *Univ. of Oklahoma School of Medicine.* (Pharmacol.)

10:45 **652.** Action of gonadotropins in hypophysectomized female rhesus monkeys. E. KNOBIL, J. L. KOSTYO* AND R. O. GREEP. *Harvard Med. School and School of Dental Medicine.*

11:00 **653.** Growth hormone and lactation. CLARK E. GROSVENOR AND CHARLES W. TURNER (intr. by W. S. PLATNER). *Univ. of Missouri.*

11:15 **654.** Milk ejection in the rabbit in response to intracarotid injections of hypertonic saline. ROBERT HOLLAND, BARRY A. CROSS AND CHARLES H. SAWYER. *Univ. of California Med. School.*

11:30 **655.** Neural control of lactation. S. M. MCCANN, ROBERT MACK* AND CHARLES GALE*. *Univ. of Pennsylvania School of Medicine.*

Blood Volume, Cerebral Circulation

THURS. A.M.—NURSES BLDG., ROOM 102

Chairman: Hymen S. Mayerson

9:00 **656.** Mixing of labeled erythrocytes in the spleen. L. KRAINTZ, J. DE BOER, E. L. SMITH AND R. A. HUGGINS (intr. by HEBBEL

E. HOFF). *Univ. of Texas Dental Branch and Baylor Univ. College of Medicine.*

9:15 **657.** Red cell trapping and fluid release in hemorrhage. S. DEAVERS* AND R. A. HUGGINS. *Baylor Univ. College of Medicine.*

9:30 **658.** Blood volume, cardiac output and peripheral resistance alterations in dogs undergoing heart-lung bypass procedures using dye-dilution techniques. EVAN F. LINDBERG, W. J. BROWN, JR. AND C. R. WALLACE (intr. by J. W. REMINGTON). *Med. College of Georgia.*

9:45 **659.** Distribution of blood after bleed-out in the rat. G. MUELHEIMS, R. DELLENBACK AND R. RAWSON (intr. by L. J. CIZEK). *Columbia Univ.*

10:00 **660.** Blood volume determination in $CoCl_2$ treated animals. RICHARD S. KERSTINE,* K. B. MOORE* AND K. C. HUANG. *Univ. of Louisville.*

10:15 **661.** Pressure-volume relationships in the left atrial appendage. LEO M. KARPELES (intr. by DANIEL D. FELLER). *Univ. of Washington.*

10:30 **662.** Circulatory and cerebrospinal fluid adjustments to experimentally regulated intracranial pressures. HERBERT B. LOCKSLEY (intr. by M. G. F. FUORTES). *Walter Reed Army Inst. of Research.*

10:45 **663.** Cerebral blood flow by venous outflow technique. CLAUDE MCCLURE* AND HAROLD D. GREEN. *Bowman Gray School of Medicine.*

11:00 **664.** Effects of cigarette smoking and intravenous nicotine on the human brain. RICHARD L. WECHSLER (intr. by JACK D. MYERS). *Univ. of Pittsburgh and Montefiore Hosp.*

11:15 **665.** Spinal fluid pressure changes during apneic oxygenation and carbon dioxide administration. H. S. SMALL, S. W. WEITZNER G. G. NAHAS (intr. by ANDRE D. GLINOS). *Walter Reed Army Med. Ctr.*

EEG, Brain Function

THURS. A.M.—MILLS BLDG., ROOM 205

Chairman: Mary A. B. Brazier

9:00 **666.** Cortical unit activity following trans-callosal volleys. CLINTON N. LATIMER AND THELMA T. KENNEDY (intr. by T. C. RUCH). *Univ. of Washington.*

9:15 **667.** Response of somatosensory cortical units to variations in stimulus intensity. THELMA T. KENNEDY AND A. L. TOWE (intr. by A. C. YOUNG). *Univ. of Washington.*

9:30 **668.** Parasaggital mesial cortex of conscious, unanesthetized cats. JOHN R. HUGHES AND JOHN A. MAZUROWSKI.* *Meyer Hosp. and Buffalo Univ. Med. School.*

9:45 **669.** EEG changes produced by mesencephalic lesions. R. T. STAUB* AND L. M. N. BACH. *Tulane Univ. School of Medicine.*

10:00 **670.** Conditional features of sound-evoked EEG responses during sleep. J. E. P. TOMAN, I. M. BUSH* AND J. T. CHACHKES.* *Chicago Med. School.*

10:15 **671.** Effects of repeated cerebral stimulation in monkeys. J. M. R. DELGADO, JUNJI USHIYAMA* AND LIONEL GAROTTE.* *Yale Univ.*

10:30 **672.** Some electroencephalographic patterns induced by self-stimulation in monkeys. R. W. PORTER, D. CONRAD* AND J. V. BRADY. *Walter Reed Army Inst. of Research.*

10:45 **673.** Characteristics of "emotional EEG arousal" in the rabbit. M. KAWAKAMI AND CHARLES H. SAWYER (intr. by D. B. LINDSLEY). *Univ. of California Med. School and VA Hosp.*

11:00 **674.** Role of corpus callosum in transfer of training in macaca mulatta. J. L. DEC. DOWNER (intr. by E. M. LANDIS). *Harvard Med. School.*

11:15 **675.** Reticular formation interactions. K. KOIZUMI, JUNJI USHIYAMA* AND C. MCC. BROOKS. *State Univ. of New York Med. Ctr.*

Thursday Afternoon, April 17, 1:30 p.m.

Diuresis, Water Transfer

THURS. P.M.—CONVENTION HALL, ROOM A

Chairman: Arnold V. Wolf

1:30 **676.** Localization of action of a mercurial diuretic in the dog. R. H. KESSLER, K. HIERHOLZER AND R. F. PITTS (intr. by J. C. HINSEY). *Cornell Univ. Med. College.*

1:45 **677.** Excretion of divalent cations during sulfate diuresis. MACKENZIE WALSER AND ANN A. BROWDER.* *Johns Hopkins Univ.*

2:00 **678.** Inhibition of potassium secretion by mercurial diuretics. WESLEY O. MCBRIDE,* I. M. WEINER* AND GILBERT H. MUDGE. *Johns Hopkins Univ. School of Medicine.*

2:15 **679.** Calcium diuresis: effects on urinary composition and renal concentrating function in man. JACOB GROSSMAN, ARTHUR G. GOLDMAN* AND MARTIN F. MINES.* *Montefiore Hosp., New York.*

2:30 **680.** Antidiuretic substances in normal and cirrhotic urines. EDUARDO ORTI,* BERTRAM LAKEN* AND ELAINE P. RALLI. *New York Univ.-Bellevue Med. Ctr.*

2:45 **681.** Influence of adrenals on edema in nephrotic syndrome. A. SURTSHIN. *Washington Univ. School of Medicine.*

3:00 **682.** Action of cyanide on water exchange in the frog following glycine injection. JAMES W. ARCHDEACON. *Univ. of Kentucky.*

3:15 **683.** Osmotic transfer of water. GIACOMO MESCHIA AND IVO SETNIKAR (intr. by D. H. BARRON). *Yale Univ.*

3:30 **684.** Relation of hormone dynamics to body fluid volume homeostasis. ERNEST L. DOBSON. *Donner Lab., Univ. of California.*

3:45 **685.** Non-uniform distribution of 4-iodoantipyrine in body water. ROBERT M. EPSTEIN (intr. by E. M. PAPPER). *Columbia Univ.* (Pharmacol.)

SYMPOSIUM: History of Physiology

THURS. P.M.—CONVENTION HALL, ROOM B

Honorary Chairman: John F. Fulton

Chairman: John Field, II

1:30 **686.** Moves of Minerva Medica: a background for the history of physiology. JOHN FIELD, II. *Univ. of California.*

2:20 **687.** William Harvey and the beginning of experimental cardiovascular physiology. CHAUNCEY D. LEAKE. *Ohio State Univ.*

3:10 **688.** Amber, silk and frog legs: highlights in the early history of bioelectricity. ROBERT D. TSCHIRGI. *Univ. of California.*

Epinephrine, Norepinephrine

THURS. P.M.—CONVENTION HALL, ROOM C

Chairman: Kenneth E. Jochim

1:30 **689.** Metabolism of epinephrine in man. O. RESNICK,* J. WOLFE,* H. FREEMAN* AND F. ELMADJIAN. *Worcester Fndn. and State Hosp.*

1:45 **690.** Metabolism of dl-C^{14}-epinephrine in mammals. L. E. GAUDETTE, J. L. SCOTT AND P. KOSKY (intr. by HUDSON HOAGLAND). *Worcester Fndn. and State Hosp.*

2:00 **691.** Separation of urinary metabolic products of dl-adrenaline-2-C^{14}. NORMAN KIRSHNER, GERDA I. KLINGMAN AND MCC. GOODALL (intr. by KEITH S. GRIMSON). *Duke Univ. Med. School.*

2:15 **692.** Catabolites of dl-adrenaline-2-C^{14} and effect thereon of Marsalid. MCC. GOODALL, LAWRENCE ROSEN* AND NORMAN KIRSHNER.* *Duke Univ. Med. School.*

2:30 **693.** Conversion of C^{14}-arterenol to epinephrine in vitro. DAVID T. MASUOKA,* WILLIAM G. CLARK AND HERMANN F. SCHOTT.* *VA Ctr. and Univ. of California Med. Ctr.*

2:45 **694.** Interaction of cysteine and glutathione with oxidation products of epinephrine and norepinephrine. SIDNEY ROSTON (intr. by H. C. LAWSON). *Univ. of Louisville School of Medicine.*

3:00 **695.** Diencephalic areas affecting adrenal medullary secretion of epinephrine and norepinephrine. ALAN GOLDFIEN* AND WILLIAM F. GANONG. *Univ. of California School of Medicine.*

3:15 **696.** Influence of vasoconstrictor tone level on blood pressure response to epinephrine. KENNETH E. JOCHIM AND W. SHIRER HAMPTON.* *Univ. of Kansas.*

3:30 **697.** Work of digital vasoconstriction produced by infused norepinephrine in Cushing's syndrome. MILTON MENDLOWITZ, STANLEY GITLOW* AND NOSRAT NAFTCHI.* *Mt. Sinai Hosp., New York.*

3:45 **698.** Cardiovascular responses in acute adrenal insufficiency. M. M. REIDENBERG,* E. A. OHLER AND R. W. SEVY. *Temple Univ. School of Medicine.*

4:00 **699.** Response of adrenal medulla to hemorrhagic hypotension. VINCENT V. GLAVIANO, NOEL BASS AND FLORIAN NYKIEL (intr. by R. C. INGRAHAM). *Univ. of Illinois College of Medicine.*

Heart: Electrophysiology

THURS. P.M.—CONVENTION HALL, BALLROOM

Chairman: Robert F. Rushmer

1:30 **700.** Mechanism of atrio-ventricular nodal delay. B. F. HOFFMAN, ANTONIO PAES DE CARVALHO* AND P. F. CRANEFIELD. *State Univ. of New York Downstate Med. Ctr.*

1:45 **701.** Effect of acetylcholine on action potentials of atrio-ventricular node. P. F. CRANEFIELD, ANTONIO PAES DE CARVALHO* AND B. F. HOFFMAN. *State Univ. of New York Downstate Med. Ctr.*

2:00 **702.** Evidence for specialized intra-atrial conducting paths. ANTONIO PAES DE CARVALHO AND B. F. HOFFMAN (intr. by C. McC. BROOKS). *State Univ. of New York Downstate Med. Ctr.*

2:15 **703.** Non-uniform distribution of vagal effect on atrial refractory period. G. K. MOE, J. ABILDSKOV,* R. ALESSI* AND M. NUSYNOWITZ.* *State Univ. of New York Upstate Med. Ctr.*

2:30 **704.** A-V nodal conduction. MARIA I. RODRIGUEZ* AND ALLEN M. SCHER. *Univ. of Washington School of Medicine.*

2:45 **705.** Membrane electrical potentials in experimental ventricular tachycardia and fibrillation. C. E. HOGANCAMP AND M. KARDESCH (intr. by JOHN H. SMITH). *Washington Univ. School of Medicine and VA Hosp.*

3:00 **706.** Antifibrillatory activity of certain antihistaminics on spontaneous ventricular fibrillation under hypothermia. E. T. ANGELAKOS* AND A. H. HEGNAUER. *Boston Univ. School of Medicine.*

3:15 **707.** Effectiveness of antifibrillatory agents in hypothermia. HENRY E. D'AMATO* AND BENJAMIN G. COVINO. *Tufts Univ. School of Medicine.*

3:30 **708.** Effect of K^+ lack and digitoxin on transmembrane potentials and tension of frog ventricle. J. LEE* AND J. W. WOODBURY. *Univ. of Washington.*

3:45 **709.** Cardiac effects of sympathomimetic amines on various cardiac pacemakers. S. V. GUZMAN, J. W. WEST AND S. BELLET (intr. by J. E. ECKENHOFF). *Philadelphia Gen. Hosp. and Univ. of Pennsylvania School of Medicine.*

4:00 **710.** Twenty electrocardiographic lead systems: their transfer impedances and correction coefficients. OTTO H. SCHMITT. *Univ. of Minnesota.*

Energy Metabolism, Effects of Altitude

THURS. P.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: James D. Hardy

1:30 **711.** Energy expenditure of normal human subjects during walking. H. J. RALSTON. *Univ. of California Med. School.*

1:45 **712.** Energy cost of walking in military types of footgear. PETER V. KARPOVICH, C. E. KEENEY* AND A. A. ALEXANDER*. *Springfield College.*

2:00 **713.** Energy expenditure of motions. LUCIEN BROUHA AND PAUL E. SMITH, JR.* *Haskell Lab.*

2:15 **714.** Effect of training on energy metabolism during exercise. JAMES A. GREEN AND BRUNO BALKE (intr. by HANS G. CLAMANN). *USAF School of Aviation Medicine, Randolph AFB.*

2:30 **715.** Prolongation of swimming stress survival of mice in caloric solutions. STELIOS C. SAMARAS AND NICHOLAS DIETZ, JR.* *Creighton Univ. School of Medicine.*

2:45 **716.** Stimulating effect of glucagon on oxygen consumption of rats. I. W. F. DAVIDSON AND J. M. SALTER (intr. by A. M. FISHER). *Univ. of Toronto, Canada.* (Biochem.)

3:00 **717.** Diminished blood ATP levels induced in the chick by dietary aluminum hydroxide gel. CHARLES W. BISHOP AND CHRISTINE B. WILLIAMS (intr. by FRED R. GRIFFITH, JR.). *Univ. of Buffalo.*

3:15 **718.** Circulatory changes in the human forearm and hand at simulated altitude. F. A. SUNAHARA AND F. GIRLING*. *Defence Research Med. Labs., Toronto, Canada.*

3:30 **719.** Changes in circulating plasma proteins of rabbit blood under altitude stress. IGNATIUS L. TRAPANI AND ALLEN H. BARTEL (intr. by JOHN B. LOEFER). *California Inst. of Technology.*

3:45 **720.** Evaluation of an experimental full torso pressure suit for the dog. E. T. CARTER*, E. J. REININGER*, F. A. HITCHCOCK AND R. EPPS*. *Ohio State Univ.*

4:00 **721.** Comparative effects of adrenocortical hormones on survival of adrenalectomized rats at sea level and altitude. PAOLA S. TIMIRAS. *Univ. of California and White Mountain Research Station.* (Pharmacol.)

Pituitary, Parathyroid

THURS. P.M.—NURSES BLDG., ROOM 102

Chairman: Rachmiel Levine

1:30 **722.** Pituitary TSH secretion in the hypothalamic lesioned rat. SAVINO A. D'ANGELO. *Jefferson Med. College.*

1:45 **723.** Response of hamster thyroid to cold exposure and hemithyroidectomy, compared with effects of TSH administration. KARL M. KNIGGE AND DAVID M. SOLOMON (intr. by EARL Eldred). *Univ. of California Med. Ctr.*

2:00 **724.** Use of the reflectance assembly of the Beckman B spectrophotometer in assay of pituitary intermedin. ROBERT S. TEAGUE AND JANE REID PATTON.* *Univ. of Alabama Med. Ctr.* (Pharmacol.)

2:15 **725.** Extra-adrenal action of exogenous ACTH: inhibition of pituitary ACTH secretion. JULIAN I. KITAY,* DONALD A. HOLUB* AND JOSEPH W. JAILER. *Columbia Univ.*

2:30 **726.** Simultaneous measurements of plasma corticosterone levels and adrenal ascorbic acid concentration. R. GUILLEMIN, G. W. CLAYTON,* J. D. SMITH* AND H. S. LIPSCOMB.* *Baylor Univ. College of Medicine.*

2:45 **727.** Influence of citrate on removal of calcium and strontium by peritoneal lavage. J. R. ELLIOTT AND ROY V. TALMAGE. *Rice Inst.*

3:00 **728.** Influence of parathyroids on intestinal absorption of radiocalcium and radiostrontium. ROY V. TALMAGE AND J. R. ELLIOTT. *Rice Inst.*

3:15 **729.** Further purification of parathyroid extract. G. D. AURBACH,* R. N. BECK* AND E. B. ASTWOOD. *Tufts Univ. Med. School and New England Ctr. Hosp.*

Peripheral Nerve

THURS. P.M.—MILLS BLDG., ROOM 205

Chairman: George H. Bishop

1:30 **730.** Effect of depolarization on potassium outflux in myelinated nerve. F. P. J. DIECKE (intr. by J. P. QUIGLEY). *Univ. of Tennessee.*

1:45 **731.** Potassium ion current in the squid axon membrane. KENNETH S. COLE. *Natl. Insts. of Health.*

2:00 **732.** Temperature and drug effects on squid axon membrane ion conductances. JOHN W. MOORE (intr. by MILTON O. LEE). *Natl. Insts. of Health.*

2:15 **733.** Increased refractoriness in axons produced by calcium lack or intensive depolarization. W. J. ADELMAN, JR., E. PAUTLER, J. ADAMS AND S. EPSTEIN (intr. by H. RAHN). *Univ. of Buffalo School of Medicine.*

2:30 **734.** Action of quaternary ammonium compounds on the neuron cell body. K. KOKETSU, J. A. CERF AND S. NISHI (intr. by L. G. ABOOD). *Univ. of Illinois College of Medicine.*

2:45 **735.** Effect of lipid soluble analogues of acetylcholine on conduction. IRWIN B. WILSON. *Columbia Univ.* (Biochem.)

3:00 **736.** Effect of procaine on squid nerve. ROBERT E. TAYLOR. *Natl. Insts. of Health.*

3:15 **737.** Neuromuscular activity of certain 3-hydroxyphenyltrialkylammonium and related compounds. W. L. NASTUK AND B. OLSON.* *Columbia Univ.*

3:30 **738.** Effect of tetanus toxin on spinal excitatory and inhibitory mechanisms in the albino rat. ERNEST RETZLAFF, ROSEMARY WAIDNER, HAROLD GOLDMAN AND BENJAMIN PASAMANICK (intr. by CHAUNCEY D. LEAKE). *Ohio State Univ.*

3:45 **739.** Nerve-muscle effects of an extract from puffer fish liver. DON R. GOE (intr. by CHARLES M. GRUBER). *College of Med. Evangelists.*

4:00 **740.** Effect of adrenalectomy on rat nerve function. ERNEST B. WRIGHT AND E. JEAN LESTER.* *Univ. of Florida College of Medicine.*

4:15 **741.** Substrates supporting activity in developing nerve fibers. F. G. CARPENTER. *Dartmouth Med. School.*

4:30 **742.** Sensitization of denervated superior cervical ganglia to acetylcholine. SHU CHIEN (intr. by M. I. GREGERSEN). *Columbia Univ.*

Physiology Society Business Meeting

THURSDAY, 4:30 P.M.—CONVENTION HALL, BALLROOM

Friday Morning, April 18, 9:00 a.m.

Electrolyte, Active Transport

FRI. A.M.—CONVENTION HALL, ROOM A

Chairman: Jeremiah Stamler

9:00 **743.** Relationships between red cell metabolism and potassium flux. SEARLE B. REES,* THOMAS J. MCMANUS,* JOHN G. GIBSON, 2ND* AND JOHN P. MERRILL. *Peter Bent Brigham Hosp. and Harvard Med. School.*

9:15 **744.** Comparative metabolic influence of fluorescent dyes upon irradiated rabbit erythrocytes. JAMES W. GREEN AND THOMAS A. BORGESE (intr. by M. A. REID). *Rutgers Univ.*

9:30 **745.** Salivary clearance of sodium and potassium. L. L. LANGLEY, C. H. GUNTHORPE* AND W. A. BEALL.* *Univ. of Alabama School of Dentistry.*

9:45 **746.** Anion transfer across the bullfrog large intestine. I. L. COOPERSTEIN AND C. ADRIAN M. HOGBEN (intr. by CHESTER E. LEESE). *Natl. Heart Inst.*

10:00 **747.** Specificity of anion exchange across gastric mucosa. ERICH HEINZ AND RICHARD DURBIN.* *Harvard Med. School and Tufts Med. School.* (Biochem.)

10:15 **748.** Transport of potassium across frog gastric mucosa. I. S. EDELMAN AND JOHN B. HARRIS. *Univ. of California.*

10:30 **749.** Active transport of bromide, iodide and thiocyanate by isolated gastric mucosa. C. ADRIAN M. HOGBEN AND NORDICA D. GREEN.* *George Washington Univ. and Natl. Heart Inst.*

10:45 **750.** Conformational specificity in a biological sugar transport system. P. G. LEFEVRE AND J. K. MARSHALL.* *Brookhaven Natl. Lab.*

11:00 **751.** Mitochondrial electrolytes and water: effect of adrenalectomy. LEONARD SHARE. *Western Reserve Univ.*

Coronary

FRI. A.M.—CONVENTION HALL, ROOM B

Chairman: Donald E. Gregg

9:00 **752.** Determination of coronary blood flow with rubidium^{86}. R. MACK,* D. NOLTING,* M. KIRSCH,* E. LUTHY,* J. D. CHOUDHURY* AND R. J. BING. *Washington Univ. and St. Louis Univ.*

9:15 **753.** Coronary blood flow in experimental A-V block. T. A. BALOURDAS* AND J. C. SCOTT. *Hahnemann Med. College.*

9:30 **754.** Coronary flow and myocardial oxygen consumption in hypercapnia. H. FEINBERG,* A. GEROLA* AND L. N. KATZ. *Michael Reese Hosp.*

9:45 **755.** Coronary perfusion pressure versus oxygen uptake of the left myocardium. DONALD E. GREGG, C. R. RAYFORD,* E. M. KHOURI,* A. A. KATTUS* AND W. P. MCKEEVER.* *Walter Reed Army Inst. of Research.*

10:00 **756.** Movement of Evans blue into the myocardium after coronary occlusion. JOSEPH J. GARAMELLA AND W. O. CASTER (intr. by W. D. ARMSTRONG). *Univ. of Minnesota.*

10:15 **757.** Ventricular myocardial composition after experimental coronary occlusion. RAYMOND A. RUSSELL,* JOAR CRAFOORD* AND A. SIDNEY HARRIS. *Louisiana State Univ. School of Medicine.*

10:30 **758.** Selective coronary artery visualization by roentgenographic and cinematographic methods for evaluating coronary vascular effects. J. W. WEST, S. V. GUZMAN AND S. BELLET (intr. by CARL F. SCHMIDT). *Univ. of Pennsylvania School of Medicine and Philadelphia Gen. Hosp.*

10:45 **759.** Effects of Khellin on cardiac and hemodynamic functions in the intact dog. RICHARD L. FARRAND* AND STEVEN M. HORVATH. *State Univ. of Iowa.*

11:00 **760.** Implantation of artery in coronary sinus or artery and other vessels and endocardial puncturing to revascularize heart, brain, limbs and other organs. JOSEPH T. ROBERTS. *VA Hosp. and Univ. of Buffalo School of Medicine.*

11:15 **761.** Comparative sensitivity of smooth muscle from coronary and systemic vessels. H. E. EDERSTROM AND W. W. OPPELT.* *Univ. of North Dakota Med. School.*

11:30 General discussion.

Heart: General

FRI. A.M.—CONVENTION HALL, ROOM C

Chairman: Simon Rodbard

9:00 **762.** Cardiovascular responses elicited by electrical stimulation of the hypothalamus. JOHN W. MANNING, JR.* AND CLARENCE N. PEISS. *Stritch School of Medicine, Loyola Univ.*

9:15 **763.** Electrical and mechanical asynchronism in the cardiac cycle. PHILIP SAMET, ROBERT S. LITWAK,* WILLIAM H. BERNSTEIN* AND LOUIS LEMBERG.* *Mt. Sinai Hosp. and Univ. of Miami School of Medicine.*

9:30 **764.** Effects of blocking agents on some effects of ouabain. JAY A. SMITH. *Chicago Med. School.*

9:45 **765.** Effect of potassium lack and ouabain on calcium^{45} uptake in frog's heart. LYELL J. THOMAS, JR., WELDON B. JOLLEY AND RICHARD GRECHMAN (intr. by L. V. HEILBRUNN). *Univ. of Southern California.*

10:00 **766.** Measurement of aortic regurgitation. IAN F. S. MACKAY. *Univ. College of the West Indies.*

10:15 **767.** Natriuresis after sodium loading as a function of venous pressure in dogs with cardiac valvular disease. MARIA M. L. LIANG AND ROBERT E. OLSON (intr. by H. S. BELDING). *Univ. of Pittsburgh Grad. School of Public Health.*

10:30 **768.** Circulatory performance in man. MILTON LANDOWNE, JOSEPH A. FALZONE, JR.,* ARTHUR H. NORRIS* AND THEODORE R. REIFF.* *Natl. Heart Inst. and Baltimore City Hosps.*

10:45 **769.** Effects of cardiac work on glycogen fractions of the heart. DON H. BLOUNT* AND DALLAS K. MEYER. *Univ. of Missouri Med. Ctr.*

11:00 **770.** A figure of merit for catheter sampling systems. HERBERT SHERMAN,* ROBERT C. SCHLANT,* WILLIAM L. KRAUS,* CHARLES B. MOORE, III,* FLORENCE W. HAYNES AND LEWIS DEXTER. *Massachusetts Inst. of Technology, Peter Bent Brigham Hosp. and Harvard Med. School.*

11:15 **771.** Interpretation of human ballistocardiogram in terms of changing volume distribution of blood. ABRAHAM NOORDERGRAAF (intr. by ISAAC STARR). *Univ. of Pennsylvania School of Medicine.*

11:30 **772.** First heart sound and its relationship to atrial systole. ROBERT C. LITTLE. *Scott and White Clinic, Temple, Texas.*

Pulmonary Diffusion, Pulmonary Blood Flow

FRI. A.M.—CONVENTION HALL, BALLROOM

Chairman: Julius H. Comroe, Jr.

9:00 **773.** Concepts and problems concerning pulmonary diffusion and pulmonary blood flow. JULIUS H. COMROE, JR. *Univ. of California Med. Ctr.*

9:30 **774.** Rebreathing method for measurement of pulmonary diffusing capacity. BENJAMIN M. LEWIS, TAI-HON LIN* AND FRANCES E. NOE.* *Wayne State Univ. College of Medicine.*

9:45 **775.** Maximum diffusing capacity of the lung for oxygen and carbon monoxide. G. M. TURINO, E. H. BERGOFSKY AND A. P. FISHMAN (intr. by D. W. RICHARDS). *Columbia Univ.*

10:00 **776.** Factors influencing the pulmonary diffusing capacity on exercise. D. V. BATES, W. F. PALMER, R. DONEVAN AND C. J. VARVIS (intr. by R. V. CHRISTIE). *McGill Univ. Clinic, Royal Victoria Hosp., Canada.*

10:15 **777.** Comparison of estimates of pulmonary diffusing capacity by steady-state methods using oxygen and carbon monoxide in normal subjects at different levels of exercise. R. H. SHEPARD, H. B. MARTIN,* H. A. WHITE,* S. PERMUTT,* E. VARNAUSKAS* AND R. L. RILEY. *Johns Hopkins Univ.*

10:30 **778.** Pulmonary function in hyperthyroidism. MYRON STEIN, PHILIP KIMBEL AND R. L. JOHNSON, JR. (intr. by A. S. FREEDBERG). *Univ. of Pennsylvania Grad. School of Medicine.*

10:45 **779.** Pulmonary capillary blood flow and diffusing capacity before and after successful treatment for hyperthyroidism. R. L. JOHNSON, JR., M. K. STEIN AND P. KIMBEL (intr. by R. E. FORSTER). *Univ. of Pennsylvania Grad. School of Medicine.*

11:00 **780.** Distribution volumes of C-14 from bicarbonate in the heart-lung system in vivo; effects of acetazoleamide (Diamox). FRANCIS P. CHINARD, THEODORE ENNS, MARY F. NOLAN AND CLAIRE-L. LEE. *Johns Hopkins School of Medicine.* (Biochem.)

11:15 **781.** Effect of lung inflation upon the pulmonary vascular bed of excised dog lungs. J. B. L. HOWELL,* SOLBERT PERMUTT* AND D. F. PROCTOR. *Johns Hopkins Hosp.*

11:30 **782.** Blood pressures, flow and volume relationships in inflated and deflated lungs. COLIN FELL,* ALCEO BARRIOS* AND PHILIP DOW. *Med. College of Georgia.*

11:45 **783.** Polarographic determination of oxygen content and capacity of blood. J.

RYAN NEVILLE (intr. by RICHARD W. BANCROFT). *School of Aviation Medicine, USAF.*

Thyroid

FRI. A.M.—CONVENTION HALL, ROOM 101

Chairman: M. S. Goldstein

9:00 **784.** Water and magnesium content of hearts of rats on 3.3′,5-triiodothyronine. CHALMERS L. GEMMILL. *Univ. of Virginia.* (Pharmacol.)

9:15 **785.** Thyroid control of glucokinase and glucose-6-phosphatase activities of rat intestinal mucosa. MARGARET T. NISHIKAWARA (intr. by ROBERT C. GRUBBS). *Ohio State Univ.*

9:30 **786.** Tissue lipids in the thyroidectomized rat. WILLIAM C. FOSTER. *Misericordia Hosp., Philadelphia.*

9:45 **787.** Metabolism of thyroxine during prolonged incubation with rat kidney cortex. S. B. BARKER AND N. ETLING*. *Univ. of Alabama Med. Ctr.*

10:00 **788.** Effect of fasting on oxygen consumption of liver slices from rats receiving thiouracil and triiodothyronine. R. L. GREIF. *Cornell Univ. Med. College.*

10:15 **789.** Effect of thyroxine on mitochondrial enzyme activity in rat tissues. SAMUEL R. TIPTON, MARILYN ZIRK* AND GEORGIA S. ST. AMAND*. *Univ. of Tennessee.*

10:30 **790.** Concentration of iodide-131 by rat thyroid homogenate and subcellular fractions. GEORGE W. BUCKALOO AND DAVID V. COHN (intr. by LENA A. LEWIS). *VA Hosp., Kansas City, and Univ. of Kansas Med. School.*

10:45 **791.** Distribution of radioactive L-thyroxine and L-triiodothyronine in tissue. H. M. KLITGAARD, P. A. KOT* AND T. M. HART*. *Marquette Univ. School of Medicine.*

11:00 **792.** Equilibration of radioiodine between thyroid gland and blood in rats and mice. SEYMOUR H. WOLLMAN AND FRANKLIN E. REED. *Natl. Insts. of Health.*

11:15 **793.** Effect of goitrogens on the adrenal gland. J. L. MCCARTHY*, R. C. CORLEY* AND M. X. ZARROW. *Purdue Univ.*

11:30 **794.** Effect of thyroid hormones on ring A reduction of cortisone by liver. F. E. YATES, J. URQUHART* AND A. L. HERBST*. *Harvard Med. School.*

Adrenal Cortex, ACTH

FRI. A.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: Eugene M. Landis

9:00 **795.** Investigation of adrenocortical secretion using silica gel columns. JOHN C. PORTER (intr. by ALLEN F. REID). *Univ. of Texas-Southwestern Med. School.*

9:15 **796.** Corticosteroids and work capacity of rat heart-lung preparation. NEIL SOLOMON, RANDALL H. TRAVIS AND GEORGE SAYERS (intr. by R. M. BERNE). *Western Reserve Univ.*

9:30 **797.** Changes in the system ascorbic acid dehydroascorbic acid during the process of corticosteroidogenesis. HABEEB BACCHUS, ALBERT F. DEBONS* AND VINCENT W. HOLLIS, JR.*. *George Washington Univ. School of Medicine.*

9:45 **798.** 11β-Hydroxyprogesterone as an intermediary in adrenal corticosteroidogenesis. J. EICHHORN* AND O. HECHTER. *Worcester Fndn. for Exptl. Biol.*

10:00 **799.** Protein nutrition and liver glycogen in cortisone maintained adrenalectomized rats. ROBERT H. DAVIS (intr. by A. K. PARPART). *Rutgers Univ.*

10:15 **800.** Changes of sodium and water excretion in normal and adrenalectomized dogs abruptly shifted from saline to dextrose and water infusions. R. D. BERLIN*, G. O. BARNETT* AND A. C. BARGER. *Harvard Med. School.*

10:30 **801.** Effect of adrenal cortical steroids on peripheral fat mobilization. ALAN C. LEVY* AND ESTELLE R. RAMEY. *Georgetown Univ. School of Medicine.*

10:45 **802.** Sex difference in the metabolism of cortisone by rat liver homogenates. ROBERT C. TROOP (intr. by ROBERT A. WOODBURY). *Univ. of Tennessee Med. Units.* (Pharmacol.)

11:00 **803.** Increased aldosterone secretion following acute constriction of thoracic and abdominal inferior vena cava. NICHOLAS A. YANKOPOULOS*, JAMES O. DAVIS, BERNARD KLIMAN* AND RALPH E. PETERSON*. *Natl. Insts. of Health.*

11:15 **804.** Effect of ACTH on guinea pig blood corticoids. HERMAN COHEN, PETER ARNOW AND WILLIAM KLEINBERG. *Princeton Labs.*

11:30 **805.** Effect of morphine on adrenocorticotrophin release in man. ROGER K. MCDONALD, FRANKLIN T. EVANS*, VIRGINIA K. WEISE* AND RAYMOND W. PATRICK*. *Natl. Insts. of Health.*

11:45 **806.** Hypothalamic lesions and endocrine function. DOROTHY T. KRIEGER (intr. by HOWARD P. KRIEGER). *Columbia Univ.*

Sweating, Thermal Injury

FRI. A.M.—NURSES BLDG., ROOM 102

Chairman: Alrick B. Hertzman

9:00 **807.** Measurement of rates of excretion of sweat solutes under physiological conditions. R. B. BARRUETO, M. MAGER AND DAVID E. BASS (intr. by D. H. K. LEE). *QM R & D Command, Natick, Mass.*

9:15 **808.** Effects of skin temperature and sweat rate on rates of excretion of sweat solutes. M. MAGER,* DAVID E. BASS AND R. B. BARRUETO.* *QM R & D Command, Natick, Mass.*

9:30 **809.** Thermal reflex sweating in paraplegic man. RUSSELL C. SECKENDORF* AND WALTER C. RANDALL. *Stritch School of Medicine, Loyola Univ.*

9:45 **810.** Progressive failure in temperature regulation during dehydration. A. B. HERTZMAN AND I. D. FERGUSON.* *St. Louis Univ.*

10:00 **811.** Effects of splenic homogenates from rats following thermal injury. MILES D. MCCARTHY, ROBERT OCKNER* AND MARTHA A. DARBY.* *Pomona College.*

10:15 **812.** Changes of electric potentials of skin induced by heat. F. B. BENJAMIN AND H. E. CLARE.* *Univ. of Pennsylvania School of Medicine.*

10:30 **813.** Electrical properties of normal and thermally injured swine skin. JAMES D. TELFER AND WARREN H. DENNIS (intr. by JAMES C. MOORE). *Univ. of Louisville School of Medicine.*

10:45 **814.** Hepatic function following thermal injury. J. P. GILMORE AND H. A. FOZZARD (intr. by S. W. HANDFORD). *Naval Med. Field Research Lab., Camp Lejeune.*

11:00 **815.** Evidence for the toxic factor theory. A. B. CHAET AND M. ALBERT (intr. by W. L. WILSON). *Boston Univ. School of Medicine and Marine Biological Lab.*

11:15 General discussion.

Sensory Physiology II

FRI. A.M.—MILLS BLDG., ROOM 205

Chairman: Harold E. Himwich

9:00 **816.** Effects of lighting regimen and blinding upon gross motor activity of mice. R. T. BRUSS,* E. JACOBSON,* F. HALBERG, H. A. ZANDER* AND J. J. BITTNER.* *Univ. of Minnesota Med. School and Cambridge State School and Hosp.*

9:15 **817.** Unit cortical responses to monocular light stimulation in unanesthetized cats. DAVID H. HUBEL (intr. by D. MCK. RIOCH). *Walter Reed Army Inst. of Research.*

9:30 **818.** Contralateral glare effect on fusion frequency of flicker (FFF). ERNST SIMONSON. *Univ. of Minnesota Med. School.*

9:45 **819.** Target size and visual form discrimination in monkeys with bitemporal lesions. TAUBA PASIK,* P. PASIK,* W. S. BATTERSBY AND M. B. BENDER. *Mt. Sinai Hosp., New York.*

10:00 **820.** Psychophysical and electrophysiological aspects of visual excitability. W. S. BATTERSBY AND I. H. WAGMAN. *Mt. Sinai Hosp., New York.*

10:15 **821.** Single unit activity at different levels of the cat retina. KENNETH T. BROWN AND TORSTEN N. WIESEL (intr. by STEPHEN W. KUFFLER). *Johns Hopkins Med. School.*

10:30 **822.** Subject variations in relation of velocity and direction of human horizontal ocular movements. JANE HYDE, ANN RICHARDSON* AND JOHN FENNER.* *Univ. of California Med. Ctr.*

10:45 **823.** Effect of visual stimulation on the electromyogram of cat eye muscles. SVEN G. ELIASSON (intr. by HARLOW W. ADES). *Univ. of Texas Southwestern Med. School.*

11:00 **824.** Spectral sensitivities of dorsal ocelli in cockroaches and honeybees. P. R. RUCK AND T. H. GOLDSMITH (intr. by K. D. ROEDER). *Tufts Univ. and Harvard Univ.*

11:15 **825.** Efferent control of amphibian spindle. CARLOS EYZAGUIRRE (intr. by A. R. MARTIN). *Univ. of Utah.*

11:30 **826.** Possible sensitizing of tactile receptors by the galvanic skin reflex. ROBERT EDELBERG AND NEIL R. BURCH.* *Baylor Univ. College of Medicine.*

Friday Afternoon, April 18, 1:30 p.m.

Shock, Transfusion, Congestive Failure

FRI. P.M.—CONVENTION HALL, ROOM A

Chairman: Ewald E. Selkurt

1:30 **827.** Bacteremia in experimental shock. A. T. KNECHT, H. M. WISE AND F. B. BRINKLEY (intr. by W. H. CHAMBERS). *Army Chemical Ctr.*

1:45 **828.** Role of hepato-splanchnic pooling following lethal injection of endotoxin in the dog, cat, rabbit and monkey. LERNER B. HINSHAW,* ROBERT P. GILBERT,* HIROSHI KUIDA* AND MAURICE B. VISSCHER. *Univ. of Minnesota.*

2:00 **829.** Relation of growth of clostridia to mortality following an experimental wound in the goat. D. LINDSEY, H. M. WISE AND A. T. KNECHT (intr. by C. TUM SUDEN). *Army Chemical Ctr.*

2:15 **830.** Perfusion of intestine in prevention of shock and death following temporary occlusion of thoracic aorta. FRED B. KESSLER*, ANDREW M. BLASZKOWSKI* AND WILLIAM M. PARKINS. *Univ. of Pennsylvania Schools of Medicine.*

2:30 **831.** Intestinal weight changes during hemorrhagic hypotension. PAUL C. JOHNSON (intr. by E. E. SELKURT). *Western Reserve Univ.*

2:45 **832.** Adjustments of the intramural vascular bed of the intestine during shock in the rat. S. BAEZ, S. HERSHEY* AND E. A. ROVENTINE*. *New York Univ.-Bellevue Med. Ctr.*

3:00 **833.** Shock and mechanisms of fibrinogenopenia. RINALDO A. TURPINI* AND MARIO STEFANINI. *St. Elizabeth Hosp. and Tufts Univ.*

3:15 **834.** Liver function in experimental traumatic shock. H. M. WISE*, A. T. KNECHT* AND A. J. DZIEMIAN. *Army Chemical Ctr.*

3:30 **835.** Effect of various types of fluid therapy on survival of monkeys exposed to standardized flash burn. SIGMUND E. LASKER* AND CHARLES L. FOX, JR. *New York Med. College.*

3:45 **836.** Cardiovascular responses of fetal lamb in utero to hypoxia. S. R. M. REYNOLDS AND W. M. PAUL*. *Univ. of Illinois College of Medicine and Univ. of Toronto.*

4:00 **837.** Spontaneous canine congestive failure of circulatory system. CHARLES R. WALLACE (intr. by W. F. HAMILTON). *Med. College of Georgia.*

4:15 **838.** Plasma incompatibility as a cause of transfusion reactions in dogs. J. Q. BLISS (intr. by A. S. V. BURGEN). *McGill Univ.*

Gastrointestinal: Saliva, Motility, Absorption

FRI. P.M.—CONVENTION HALL, ROOM B

Chairman: J. P. Quigley

1:30 **839.** Comparative electrolyte levels of resting and active salivary glands. L. H. SCHNEYER AND C. A. SCHNEYER.* *Univ. of Alabama Med. Ctr.*

1:45 **840.** Effects of d-tubocurarine on submandibular salivary gland. LEONARD H. ELWELL. *Univ. of Michigan.*

2:00 **841.** Behavior of esophagus in response to distention. D. F. MAGEE. *Univ. of Washington.*

2:15 **842.** Fluorocinematography and intraluminal pressure recordings in study of esophageal motor activity: method and perspectives. G. VANTRAPPEN, M. D. LIEMER AND E. C. TEXTER, JR. (intr. by J. H. ANNEGERS). *Northwestern Univ. and VA Research Hosp., Chicago.*

2:30 **843.** Esophageal sphincter mechanisms. ERIC A. SCHENK AND EVAN L. FREDERICKSON (intr. by ARTHUR C. WARD, JR.). *Univ. of Washington School of Medicine.*

2:45 **844.** Phasic intraluminal pressure waves from the stomach. E. CLINTON TEXTER, JR. AND JUNKO IKEYA (intr. by H. C. HIGHTOWER). *Northwestern Univ. and VA Research Hosp., Chicago.*

3:00 **845.** Effect of glucagon on propulsive motility of rat small intestine. J. CLIFFORD STICKNEY, DAVID W. NORTHUP AND EDWARD J. VAN LIERE. *West Virginia Univ. Med. Ctr.*

3:15 **846.** Influence of deoxypyridoxine on methionine absorption. FRANCIS A. JACOBS (intr. by B. DEBOER). *Univ. of North Dakota School of Medicine.*

3:30 **847.** Comparison of rate of water, sodium and potassium absorption from neu-

tral and acid contents in duodenum and ileum of the dog. RAYMOND L. NEWNUM,* CHARLES F. CODE AND ALAN L. ORVIS.* *Mayo Clinic and Mayo Fndn.*

3:45 **848.** Development of "active" absorption in chicks. PHYLLIS HOLT BOGNER (intr. by PAUL L. MCLAIN). *Univ. of Maryland and Univ. of Pittsburgh School of Medicine.*

Lipids

FRI. P.M.—CONVENTION HALL, ROOM C

Chairman: Cecil Entenman

1:30 **849.** Separation of heparin-induced lipemia clearing factor from human plasma. BRONIUS BASKYS, W. F. LEVER AND EDMUND KLEIN (intr. by N. L. R. BUCHER). *Boston Univ. Med. School and Harvard Med. School.*

1:45 **850.** Effect of type of dietary fat and cholesterol on composition of rabbit plasma, liver and perinephric lipides. J. D. EVANS, N. L. OLEKSYSHYN*, F. E. LUDDY,* R. A. BARFORD* AND R. W. RIEMENSCHNEIDER.* *Temple Univ. and Eastern Regional Research Lab., USDA.*

2:00 **851.** Cholesterogenesis in the intact alloxan-diabetic rat. R. HILL* AND I. L. CHAIKOFF. *Univ. of California School of Medicine.*

2:15 **852.** Plasma non-esterified fatty acids in hyperthyroid states. E. L. BIERMAN,* CLAYTON RICH* AND I. L. SCHWARTZ. *Rockefeller Inst.*

2:30 **853.** Liver and plasma lipid metabolism in acute ethanol intoxication. N. R. DI LUZIO. *Univ. of Tennessee.*

2:45 **854.** Decarboxylation of linoleic acid in vivo. B. THEODORE COLE (intr. by LOUIS A. TOTH). *Louisiana State Univ.*

3:00 **855.** Factors influencing fatty acid oxidation in rat skeletal muscle. IRVING B. FRITZ, DON DAVIS,* ROBERT HOLTROP* AND HAROLD DUNDEE. *Univ. of Michigan.*

3:15 **856.** Tissue distribution of orally administered I^{131} labeled neutral fat in dogs. ROBERT L. BEALS,* KEITH REEMTSMA* AND HAROLD G. BARKER. *Columbia Univ.*

3:30 **857.** Validity of using I^{131} fatty acid for study of tissue distribution and incorporation into phosphatides. E. VAN HANDEL* AND D. B. ZILVERSMIT. *Univ. of Tennessee.*

3:45 General discussion.

Cardiac Dynamics

FRI. P.M.—CONVENTION HALL, BALLROOM

Chairman: Harold D. Green

1:30 **858.** Hypothalamic influence on left ventricular performance. R. F. RUSHMER AND ORVILLE SMITH.* *Univ. of Washington.*

1:45 **859.** Factors determining duration and mean rate of ventricular ejection. E. BRAUNWALD, S. J. SARNOFF AND W. N. STAINSBY.* *Natl. Heart Inst.*

2:00 **860.** Left ventricular volumes and force of contraction in large and small hearts. J P. HOLT, H. KINES,* E. A. RHODE* AND S. A. PEOPLES.* *Univ. of Louisville and Univ. of California.*

2:15 **861.** Pressure and output developed by turtle ventricle with zero filling pressure. J. C. KRANER (intr. by ERIC OGDEN). *Ohio State Univ.*

2:30 **862.** A new method for measurement of instantaneous dimensional changes of left ventricle, kidneys, and other organs in animals. SHERIDAN L. C. PERRY AND EDWARD W. HAWTHORNE (intr. by JOSEPH L. JOHNSON). *Howard Univ. College of Medicine.*

2:45 **863.** Relations between left ventricular stroke work and end-diastolic diameter at different filling pressures in anesthetized normal dogs and dogs with atrial septal defects (ASD). EDWARD W. HAWTHORNE, SHERIDAN L. C. PERRY,* MARY GASPAR,* GERALD THOMSON,* WILLIAM PITTS* AND WILLIAM G. POGUE.* *Howard Univ. College of Medicine.*

3:00 **864.** Effect of thyroid hormones and temperature on kinetics of contraction and relaxation of ventricular heart muscle. WILLIAM R. BREWSTER, JR., JAMES P. ISAACS, PATRICIA F. OSGOOD, ANNE M. NYLANDER AND RAYMOND Y. CHOCK (intr. by HENRY K. BEECHER). *Harvard Med. School and Massachusetts Gen. Hosp.*

3:15 **865.** Conduction of premature ventricular beats in dog heart. HENRY H. SWAIN AND ROBERTO VARGAS.* *Univ. of Michigan.* (Pharmacol.)

3:30 **866.** Hemodynamic observations on the cow. J. T. DOYLE,* J. L. PATTERSON, JR., J. V. WARREN, D. K. DETWEILER* AND M. REYNOLDS. *Albany Med. College, Med. College of Virginia, Duke Univ. School of Medicine and Univ. of Pennsylvania School of Veterinary Medicine.*

3:45 **867.** Respiration in the domestic ox. J. L. PATTERSON, JR., J. T. DOYLE,* J. V. WARREN, D. K. DETWEILER* AND M. REYNOLDS. *Med. College of Virginia, Albany*

Med. College, Duke Univ. and Univ. of Pennsylvania School of Veterinary Medicine.

4:00 **868.** Effect of castration on properties of rat myocardium. T. M. KING,* R. KUBOTA* AND W. V. WHITEHORN. *Univ. of Illinois College of Medicine.*

4:15 **869.** Comparison of electrokymography with dimensional recording devices in situ. ALEXANDER P. GREER (intr. by K. J. K. BUETTNER). *Univ. of Washington.*

Adaptation, Effects of Temperature

FRI. P.M.—CONVENTION HALL, ROOM 200

Chairman: D. Bruce Dill

1:30 **870.** Temperature-dependent metabolic responses in cold- and heat-acclimated rats. ROY B. MEFFERD, JR. AND HENRY B. HALE (intr. by HUBERTUS STRUGHOLD). *Univ. of Texas, Austin, and USAF School of Aviation Medicine, Randolph AFB.*

1:45 **871.** Temperature-dependent metabolic functions in altitude-acclimated rats. HENRY B. HALE AND ROY B. MEFFERD, JR. (intr. by HERBERT B. GERSTNER). *USAF School of Aviation Medicine, Randolph AFB, and Univ. of Texas.*

2:00 **872.** Respiration in tissues of goldfish adapted to high and low temperatures. DONALD R. EKBERG (intr. by C. LADD PROSSER). *Univ. of Illinois.*

2:15 **873.** Temperature acclimation in amphibians. A. F. RIECK, J. BELLI AND M. BLASKOVICS (intr. by L. H. HAMILTON). *Marquette Univ. School of Medicine.*

2:30 **874.** Water content in turtle tissues. X. J. MUSACCHIA AND W. GRUNDHAUSER.* *St. Louis Univ.*

2:45 **875.** Bile flow increased by cold adaptation. A. INTOCCIA* AND L. VAN MIDDLESWORTH. *Univ. of Tennessee.*

3:00 **876.** Cellular mechanisms of cold adaptation in the rat. ROBERT E. SMITH AND A. S. FAIRHURST.* *Univ. of California Med. School.*

3:15 **877.** Effects of temperature and age on growth rate, blood GSH and PBI^{131} levels. TAYMOUR H. KAMAL AND HAROLD D. JOHNSON (intr. by DENNIS T. MAYER). *Univ. of Missouri College of Agriculture.* (Biochem.)

3:30 **878.** Heat exchanges of nude men exposed to cold varying from moderate to severe. P. F. IAMPIETRO, E. R. BUSKIRK AND DAVID E. BASS (intr. by A. H. HEGNAUER). *QM R & D Command, Natick, Mass.*

3:45 **879.** Effect of environmental temperature on time of puberty in beef calves. HOMER E. DALE, A. C. RAGSDALE* AND CHU SHAN CHENG.* *Univ. of Missouri, Agric. Exper. Station.*

4:00 **880.** Effect of constant environmental temperature and growth on blood volume of calves. P. R. STAHL AND H. E. DALE (intr. by ROBERT L. JACKSON). *Univ. of Missouri Agric. Exper. Station* (Nutr.)

4:15 **881.** Localized skin temperature changes and their relation to temperature sensation. E. HENDLER AND J. D. HARDY (intr. by C. F. GELL). *Naval Air Materiel Ctr. and Univ. of Pennsylvania School of Medicine.*

Spinal Cord, Reflexes, Synapses

FRI. P.M.—MILLS BLDG., ROOM 205

Chairman: Chandler McC. Brooks

1:30 **882.** Transcallosal activation of cortico-spinal elements. MARTIN GIRADO* AND DOMINICK P. PURPURA. *Columbia Univ.*

1:45 **883.** Cortico-spinal tract in monkey. W. W. CHAMBERS AND C. N. LIU.* *Univ. of Pennsylvania.*

2:00 **884.** Repetitive firing of nerve cells. PATRICK D. WALL. *Massachusetts Inst. of Technology.*

2:15 **885.** Direct contralateral inhibition. KARL FRANK AND JAMES M. SPRAGUE. *Natl. Insts. of Health and Univ. of Pennsylvania.*

2:30 **886.** Influence on reflex activity of bulbar reticulospinal system. A. J. MANDELL, A. E. U. EDISEN AND L. M. N. BACH (intr. by H. S. MAYERSON). *Tulane Univ. School of Medicine.*

2:45 **887.** Reflex regulation of fusimotor neurons. C. C. HUNT AND A. S. PAINTAL.* *Univ. of Utah.*

3:00 **888.** Effects of asphyxia on galvanic skin reflex before and after spinal transection. G. H. WANG. *Univ. of Wisconsin.*

3:15 **889.** Reflex activity of external anal sphincter in the cat. BEVERLY BISHOP (intr. by G. CLARK). *Univ. of Buffalo.*

3:30 **890.** Characterization of axosomatic and axodendritic synapses by chemical inhibitors. AMADEO S. MARRAZZI, JOSE M. RODRIGUEZ* AND E. ROSS HART.* *VA Research Labs. in Neuropsychiatry, Pittsburgh.*

3:45 **891.** Electric organ electrogenesis in Gymnotus. M. V. L. BENNETT* AND H. GRUNDFEST. *Columbia Univ.*

PAPERS READ BY TITLE

892. Localization of brainstem pathway in shivering. W. J. FREEMAN* AND ALLAN HEMINGWAY. *Univ. of California.*

893. Incorporation of propionate into total body fat. D. D. FELLER, E. FEIST* AND D. WHITENACK.* *VA Hosp. and Univ. of Washington School of Medicine.*

894. Origin of electric oscillations in living tissue by antagonism of electric effects of oxidative metabolism against phospholipid splitting (the transmembrane reaction). REINHARD H. BEUTNER. *Des Moines Still College.*

895. Action of Nisentil during labor. FRANKLIN F. SNYDER. *Harvard Med. School.*

896. Cerebral O_2 as influenced by O_2 at high pressure (OHP). JOHN W. BEAN AND LAWRENCE P. SULLIVAN.* *Univ. of Michigan.*

897. Cycloserine and development of the fruitfly, Drosophila melanogaster. E. D. GOLDSMITH. *New York Univ. College of Dentistry and Grad. School of Arts and Science.*

898. Influence of proprioception on hypothalamus and cerebral cortex. ERNST GELLHORN. *Univ. of Minnesota.*

AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS

Forty-ninth Annual Meeting[1]

Monday Afternoon, April 14, 1:30 p.m.

Steroids: Chemistry and Enzymatic Hydroxylation

MON. P.M.—CONVENTION HALL, ROOM D

Chairman: T. F. Gallagher

1:30 **899.** Isolation of a new sterol, methosterol, from rat tissues. W. W. WELLS AND D. H. NEIDERHISER (intr. by KLAUS HOFMANN). *Univ. of Pittsburgh School of Medicine.*

1:45 **900.** An extraction and chromatographic procedure for Porter-Silber chromogens. EDWARD L. RONGONE (intr. by P. A. KATZMAN). *Alton Ochsner Medical Fndn. and Tulane Univ.*

2:00 **901.** Steroid antagonism of protein binding of estradiol-4-C^{14} metabolites in vitro. GIDEON RUMNEY (intr. by CHARLES TERNER). *Worcester Fndn. for Exptl. Biology.*

2:15 **902.** Chemistry and biological properties of estranes. CHIÀDAO CHEN (intr. by VIRGIL L. KOENIG). *Northwestern Univ. Med. School.*

2:30 **903.** Isolation of progesterone and 4-pregnen-20α-Ol-3-one from pregnant rat tissues. WALTER G. WIEST (intr. by LEO T. SAMUELS). *Univ. of Utah College of Medicine.*

2:45 **904.** Isotope derivative assay of aldosterone in biological extracts. BERNARD KLIMAN AND RALPH E. PETERSON (intr. by M. FLAVIN). *Natl. Inst. of Arthritis and Metabolic Diseases.*

3:00 **905.** Identification of compound S and other steroids in human adrenal venous blood. JOSEPH C. TOUCHSTONE (intr. by CARL BACHMAN). *Univ. of Pennsylvania.*

3:15 **906.** Use of tritium-labeled steroids and paper chromatography to quantitate microbial steroid conversions. ROBERT E. OBER* AND CARL S. VESTLING. *Univ. of Illinois.*

3:30 **907.** Adrenal 11-β hydroxylation. GORDON M. TOMKINS, JEAN F. CURRAN* AND PATRICIA J. MICHAEL.* *Natl. Inst. of Arthritis and Metabolic Diseases.*

3:45 **908.** Steric considerations in the enzymatic course of the hydroxylation of steroids. MIKA HAYANO, MARCEL GUT* AND D. H. PETERSON*. *Worcester Fndn. for Exptl. Biology and The Upjohn Co.*

Proteolytic Enzymes I

MON. P.M.—CONVENTION HALL, ROOM E

Chairman: E. L. Smith

1:30 **909.** Inhibition of the chymotryptic hydrolysis of *p*-nitrophenyl acetate. ROBERT J. FOSTER (intr. by CARL M. STEVENS). *State College of Washington.*

1:45 **910.** Hydrolysis of nitrophenyl esters by proteolytic enzymes. JULIUS GOLUBOW AND CHARLES J. MARTIN (intr. by A. E. AXELROD). *Univ. of Pittsburgh School of Medicine.*

2:00 **911.** Denaturation of chymotrypsin. F. L. ALDRICH AND A. K. BALLS. *Purdue Univ.*

2:15 **912.** Activation of trypsinogen by cathepsin B. LOWELL M. GREENBAUM AND ARTHUR HIRSHKOWITZ (intr. by ROBERT F. FURCHGOTT). *State Univ. of New York Downstate Med. Ctr.*

2:30 **913.** An active derivative of acetyltrypsinogen. T. VISWANATHA*, ROBERT C. WONG* AND IRVIN E. LIENER. *Univ. of Minnesota.*

2:45 **914.** Chemical modification of enzymes.

[1] *Program Committee:* E. H. STOTZ, Chairman; A. L. DOUNCE, L. L. MILLER, W. W. WESTERFELD, H. H. WILLIAMS, G. V. MARINETTI, M. MORRISON.

S. M. VRATSANOS*, J. RIORDAN*, M. BIER AND F. F. NORD. *Fordham Univ.*

3:00 **915.** Esterase activity of synthetic histidine peptides. R. B. MERRIFIELD AND D. W. WOOLLEY. *Rockefeller Inst.*

3:15 **916.** Reaction of hydrolytic enzymes with toxic phosphorus compounds. L. A. MOUNTER. *Med. College of Virginia.*

3:30 **917.** Optimum pH for action of pepsin. MAX SCHLAMOWITZ AND LINN U. PETERSON*. *Roswell Park Mem. Inst.*

3:45 **918.** Separation of two proteolytic activities from human gastric juice. VIRGINIA RICHMOND*, JORDAN TANG*, STEWART WOLF, RANWEL CAPUTTO AND RAUL E. TRUCCO. *Oklahoma Med. Research Fndn. and Univ. of Oklahoma School of Medicine.*

4:00 **919.** Absorptive patterns of peptides through the isolated rat intestine. DONALD S. WIGGANS AND JOHN M. JOHNSTON (intr. by H. C. TIDWELL). *Univ. of Texas Southwestern Med. School.*

Photosynthesis

MON. P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: H. Gaffron

1:30 **920.** Chromatography of chlorophylls. MORRIS GREEN (intr. by GEORGE W. CASARETT). *Univ. of Rochester School of Medicine.* (Pathol.)

1:45 **921.** Function of pigments in photophosphorylation by bacterial chromatophores. I. C. ANDERSON AND R. C. FULLER (intr. by R. STEELE). *Brookhaven Natl. Lab.*

2:00 **922.** Pathways in photosynthetic phosphorylation by spinach chloroplasts. A. T. JAGENDORF AND M. AVRON (intr. by S. P. COLOWICK). *Johns Hopkins Univ.*

2:15 **923.** Pyridine nucleotide reduction by illuminated chromatophores of Rhodospirillum rubrum. LEO P. VERNON. *Brigham Young Univ.*

2:30 **924.** Photoinactivation of photosynthetic pyridine nucleotide reductase. JOHN GIOVANELLI* AND ANTHONY SAN PIETRO. *Johns Hopkins Univ.*

2:45 **925.** Conversion of formate carbon to starch during photosynthesis. MARTIN GIBBS. *Cornell Univ.*

3:00 **926.** Identity of fluoride-labile CO_2 fixation product in algae. WOLF VISHNIAC AND R. C. FULLER*. *Yale Univ. and Brookhaven Natl. Lab.*

3:15 **927.** Accumulation of glycolic acid in green leaves treated with α-hydroxy-sulfonates. ISRAEL ZELITCH. *Connecticut Agric. Exper. Station.*

Nucleic Acid Metabolism: Enzymatic Synthesis

MON. P.M.—CONVENTION HALL, ROOM 201

Chairman: S. Ochoa

1:30 **928.** Incorporation of deoxyribonucleotides into DNA by a soluble mammalian enzyme system. R. MANTSAVINOS* AND E. S. CANELLAKIS. *Yale Univ.*

1:45 **929.** DNA synthesis by enzymes from mammalian tissues. F. J. BOLLUM (intr. by C. P. BARNUM, JR.). Univ. of Wisconsin.

2:00 **930.** Chemical structure of enzymatically synthesized deoxyribonucleic acid (DNA). JULIUS ADLER*, MAURICE J. BESSMAN*, I. R. LEHMAN*, H. K. SCHACHMAN, E. S. SIMMS* AND ARTHUR KORNBERG. *Washington Univ. School of Medicine.*

2:15 **931.** Physical chemical characterization of enzymatically synthesized deoxyribonucleic acid (DNA). H. K. SCHACHMAN, I. R. LEHMAN*, MAURICE J. BESSMAN*, JULIUS ADLER*, E. S. SIMMS* AND ARTHUR KORNBERG. *Washington Univ. School of Medicine.*

2:30 **932.** Incorporation of ribonucleotides in DNAase-sensitive material. JERARD HURWITZ. *Washington Univ. School of Medicine.*

2:45 **933.** Synthesis of a phosphorylated-polyribonucleotide by a new enzymatic system. MARIANNE GRUNBERG-MANAGO AND JACQUES R. FRESCO (intr. by F. H. WESTHEIMER). *Institut de Biologie, Paris, and Harvard Univ.*

3:00 **934.** Incorporation of adenine nucleotides into ribonucleic acid by enzyme systems from rat liver. EDWARD HERBERT (intr. by LAURENCE G. WESSON). *Massachusetts Inst. of Technology.*

3:15 **935.** Oligonucleotides as primers for polynucleotide phosphorylase. M. F. SINGER*, R. J. HILMOE* AND L. A. HEPPEL. *Natl. Insts. of Health.*

3:30 **936.** Experiments with P^{32}-labeled synthetic RNA. PRISCILLA J. ORTIZ AND SEVERO OCHOA. *New York Univ. College of Medicine.*

3:45 **937.** CDP-polynucleotide phosphorylase. PETER S. OLMSTED (intr. by R. H. MCCOY). *Univ. of Pittsburgh School of Medicine.*

4:00 **938.** Polyadenylic acid phosphorylysis. D. D. HENDLEY* AND R. F. BEERS, JR. *Children's Hosp. School, Inc., Baltimore.*

4:15 **939.** RNA-dependent pyrophosphate incorporation into ribonucleoside triphosphates. C. W. CHUNG (intr. by H. G. DAY). *Indiana Univ.*

Enzymes: General I

MON. P.M.—CONVENTION HALL, ROOM 202

Chairman: S. P. Colowick

1:30 **940.** Oxidation of dimethyl-*p*-phenylenediamine by serum from normal animals. EUGENE M. SPORN (intr. by D. B. DILL). *Army Chem. Ctr.*

1:45 **941.** Reversible enzymatic oxidation of cyclic secondary alcohols. A. DONALD MERRITT (intr. by FLOYD S. DAFT). *Natl. Insts. of Health.*

2:00 **942.** Oxygen transfer by *p*-hydroxyphenylpyruvate oxidase. K. YASUNOBU*, T. TANAKA*, W. E. KNOX AND H. S. MASON. *Univ. of Oregon Med. School, Harvard Med. School and New England Deaconess Hosp.*

2:15 **943.** Synthesis and metabolism of betaine aldehyde. MAX JELLINEK* AND D. R. STRENGTH. *St. Louis Univ. School of Medicine.*

2:30 **944.** Oxidation of choline and aldehydes by rat liver mitochondria. J. L. GLENN (intr. by W. THOMPSON). *Albany Med. College.*

2:45 **945.** Enzymatic oxidation of *o*-aminophenols. H. T. NAGASAWA* AND H. R. GUTMANN. *V. A. Hosp., Minneapolis, and Univ. of Minnesota.*

3:00 **946.** Reduction of nitroaryl groups by Aspergillus niger. EDWIN S. HIGGINS (intr. by J. C. FORBES). *Med. College of Virginia.*

3:15 **947.** Effect of nitro compounds on polymorphonuclear leucocytes. FRANCES L. ESTES (intr. by A. C. GRIFFIN). *Baylor Univ. College of Medicine.*

Mucopolysaccharides

MON. P.M.—CONVENTION HALL, ROOM 300

Chairman: A. Dorfman

1:30 **948.** Determination of hexuronic acid in biological material. M. R. SHETLAR AND C. L. SHETLAR (intr. by A. C. KURTZ). *Univ. of Oklahoma School of Medicine.*

1:45 **949.** In vitro formation of hyaluronic acid by cells in the vitreous body and by comb tissue. ENDRE A. BALAZS, LARS SUNDBLAD AND LASZLO TOTH (intr. by LASZLO VARGA). *Retina Fndn., Massachusetts Eye and Ear Infirmary and Harvard Med. School.*

2:00 **950.** Production of acid mucopolysaccharides by fibroblasts in a synthetic medium. GERALD S. BERENSON, WILLIAM M. LUMPKIN AND VELMA G. SHIPP (intr. by R. A. COULSON). *Louisiana State Univ. School of Medicine.*

2:15 **951.** Hexosamine-containing glycoproteins of bovine synovial fluid. O. W. NEUHAUS AND M. LETZRING (intr. by ARTHUR H. SMITH). *Wayne State Univ. College of Medicine.*

2:30 **952.** Interactions of hyaluronic acid with components of synovial fluid. WARD PIGMAN, H. L. HOLLEY*, D. PLATT* AND E. GRAMLING*. *Univ. of Alabama Med. Ctr.*

2:45 **953.** Composition of mucoid fractions from human duodenal fluid. Z. DISCHE, P. DI SANT' AGNESE AND J. YOULOS. *Columbia Univ.*

3:00 **954.** Colominic acid, an O-sialic acid polymer. GUY T. BARRY. *Univ. of Tennessee.*

Fatty Acid Chemistry and Metabolism

MON. P.M.—CONVENTION HALL, ROOM 400

Chairman: R. Holman

1:30 **955.** Paper chromatography of lipides. H. K. MANGOLD, J. L. GELLERMAN AND H. SCHLENK (intr. by L. I. SMITH). *Univ. of Minnesota.*

1:45 **956.** Use of different partition agents for separating saturated and unsaturated fatty acids by gas-liquid chromatography. S. R. LIPSKY AND R. A. LANDOWNE (intr. by A. LERNER). *Yale Univ.*

2:00 **957.** Isolation of polyunsaturated acids by displacement chromatography. RALPH T. HOLMAN AND HERBERT HAYES*. *Univ. of Minnesota.*

2:15 **958.** Incorporation of acetate into lipids of human leukocytes. EDWARD J. PASTORE AND FABIAN J. LIONETTI (intr. by F. MAROTT SINEX). *Boston Univ. School of Medicine.*

2:30 **959.** Role of butyryl CoA in the synthesis of fatty acids by the pigeon liver system. R. W. LONG (intr. by L. J. TEPLY). *VA Hosp. and Univ. of Wisconsin.*

2:45 **960.** Requirements for fatty acid biosynthesis. E. B. TITCHENER*, D. M. GIBSON AND SALIH J. WAKIL*. *Univ. of Wisconsin.*

3:00 **961.** In vitro and in vivo oxidation of unsaturated fatty acids. W. S. LYNN, ROSE BROWN, PEGGY WELCH AND CARL WEBER (intr. by FREDERICK BERNHEIM). *Duke Univ.*

3:15 **962.** Biosynthesis of cholesterol and fatty acids in the adult rat brain. H. J. Nicholas and B. E. Thomas (intr. by J. K. Frenkel). *Univ. of Kansas Med. Ctr.* (Pathol.)

3:30 **963.** Effect of erucic acid on incorporation of acetate-1-C^{14} into cholesterol and fatty acids. K. K. Carroll (intr. by J. B. Collip). *Collip Med. Research Lab., Canada.*

3:45 **964.** Enzymatic carboxylation of propionyl CoA. Alisa Tietz (intr. by W. S. Beck). *New York Univ. College of Medicine.*

4:00 **965.** Carboxylation of propionyl coenzyme A. M. D. Lane and D. R. Halenz (intr. by A. E. Schaefer). *Virginia Polytechnic Inst.* (Nutr.)

4:15 **966.** β-Hydroxypropionic dehydrogenase. Halina Den (intr. by H. C. Eckstein). *Univ. of Michigan.*

Carbohydrate Metabolism

Mon. p.m.—Museum Auditorium

Chairman: A. B. Hastings

1:30 **967.** Biosynthesis of salicyl glucuronides in vitro. David Schachter, David J. Kass and Theodora J. Lannon (intr. by Karl Meyer). *Columbia Univ. and Presbyterian Hosp., New York City.*

1:45 **968.** Glucose catabolism in fetal and adult mammalian (pig) heart. Vernon H. Cheldelin, R. W. Newburgh and R. L. Jolley.* *Oregon State College.*

2:00 **969.** Synthesis of lactose, glycerol and serine in the mammary gland. H. G. Wood, S. Joffe,* R. Gillespie,* R. G. Hansen and H. Hardenbrook.* *Western Reserve Univ. and Univ. of Illinois.*

2:15 **970.** Effect of diet on glucose and galactose metabolism in rat liver slices. B. R. Landau and S. M. Zottu (intr. by A. Baird Hastings). *Harvard Med. School.*

2:30 **971.** A comparison of galactose tolerance tests and galactose-1-phosphate-uridyl transferase activity of red cells in mentally retarded children. R. K. Bretthaure,* Joseph Albaum* and R. G. Hansen. *Univ. of Illinois and Lincoln State School.*

2:45 **972.** Metabolism of L-fuculose. E. C. Heath (intr. by L. H. Louis). *Univ. of Michigan.*

3:00 **973.** Transformation of nucleosidyl ribose to sedoheptulose phosphate by rat liver. Hsien-Gieh Sie,* V. N. Nigam* and William H. Fishman. *Tufts Univ. School of Medicine and New England Ctr. Hosp.*

3:15 **974.** Pathways of ribose synthesis in the rat. Howard H. Hiatt. *Beth Israel Hosp. and Harvard Med. School.*

3:30 **975.** Biosynthesis of sugars by normal and bacteriophage-infected E. coli. F. K. Bagatell,* E. M. Wright* and H. Z. Sable. *Western Reserve Univ.*

3:45 **976.** Bacterial synthesis of deoxyribose and ribose. I. A. Bernstein and Dorothy Sweet*. *Med. School, Univ. of Michigan.*

4:00 **977.** Ribose synthesis in Alcaligenes faecalis. Faith Brenneman (intr. by D. M. Bonner). *Yale Univ.*

4:15 **978.** Effect of insulin, hexokinase and glucagon on fructolysis by bovine spermatazoa. F. X. Gassner, J. F. Masken,* M. L. Hopwood* and R. P. Martin*. *Colorado State Univ.* (Physiol.)

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Tuesday Morning, April 15, 9:00 a.m.

Steroid Metabolism

TUES. A.M.—CONVENTION HALL, ROOM D

Chairman: L. T. Samuels

9:00 **979.** Corticosteroid metabolites in the urine of dogs. HILDEGARD WILSON AND JOHN J. BORRIS.* *Natl. Insts. of Health.*

9:15 **980.** Urinary excretion of Δ^4-pregnene-11β, 20β, 21-triol-3-one after administration of 11-dehydrocorticosterone. E. M. RICHARDSON*, HELEN BULASCHENKO* AND F. C. DOHAN. *School of Medicine, Univ. of Pennsylvania.* (Physiol.)

9:30 **981.** Tritiated cholesterol—a precursor of cortisol-T in the guinea pig. HAROLD WERBIN, I. L. CHAIKOFF AND EMMETT JONES*. *Univ. of California School of Medicine.*

9:45 **982.** Chemical fate of cortisol-4-C^{14} in the muscle of normal and stressed rats. FRANK DEVENUTO* AND ULRICH WESTPHAL. *U. S. Army Med. Research Lab., Fort Knox.*

10:00 **983.** Comparison of cortisol metabolism by two strains of cultured human uterine fibroblasts. B. I. GROSSER,* H. EARLE SWIM* AND MAX L. SWEAT. *Western Reserve Univ. School of Medicine and Univ. of Utah College of Medicine.*

10:15 **984.** Metabolism of cortisol by mouse connective tissue. DAVID L. BERLINER AND THOMAS F. DOUGHERTY (intr. by A. ZAFFARONI). *Univ. of Utah.*

10:30 **985.** Altered cortisol metabolism in the human subjected to trauma. NORMAN I. GOLD AND FRANCIS D. MOORE (intr. by D. F. WAUGH). *Harvard Med. School.*

10:45 **986.** Relationship between steroid output in adrenal vein blood and steroid formation of adrenal incubates of hypertensive patients. DAVID Y. COOPER,* MARIA KASPAROW,* WILLIAM S. BLAKEMORE* AND OTTO ROSENTHAL. *Univ. of Pennsylvania.*

Cytochemistry

TUES. A.M.—CONVENTION HALL, ROOM E

Chairman: V. R. Potter

9:00 **987.** Effects of carbon tetrachloride intoxication on distribution of metals in subcellular fractions of rat liver. RALPH E. THIERS AND EDWARD S. REYNOLDS (intr. by GEORGE P. BERRY). *Harvard Med. School.* (Immunol.)

9:15 **988.** Biochemical changes accompanying development of fatty liver. R. O. RECKNAGEL, J. STADLER AND M. LITTERIA (intr. by F. R. MAUTZ). *Western Reserve Univ.* (Physiol.)

9:30 **989.** Relative mitochondrial volume: mitocrits and optical density measurements. SASHA MALAMED AND RICHARD O. RECKNAGEL (intr. by HOWARD SACHS). *Western Reserve Univ. School of Medicine.*

9:45 **990.** Photometric estimation of mitochondrial volume. HENRY TEDESCHI* AND DANIEL L. HARRIS. *Univ. of Chicago.*

10:00 **991.** Intracellular distribution of glutathione in rat liver. U. D. REGISTER AND R. L. MCCARTNEY (intr. by M. N. CAMIEN). *College of Med. Evangelists.*

10:15 **992.** Intracellular enzyme distribution patterns of mouse pancreas. JULIAN L. VAN LANCKER AND GENE A. MORRILL.* *Univ. of Utah College of Medicine.* (Pathol.)

10:30 **993.** Transfer of ribonucleic acid from nuclei to cytoplasm in vitro. C. SCHOLTISSEK, JOHN H. SCHNEIDER AND VAN R. POTTER. *Univ. of Wisconsin.*

10:45 **994.** Nucleic acid synthesis in isolated thymus nuclei. THEODORE R. BREITMAN* AND GEORGE C. WEBSTER. *Ohio State Univ.*

11:00 **995.** In vitro synthesis of protein and nucleic acid by isolated cell nuclei. E. R. M. KAY. *Dalhousie Univ., Canada.*

11:15 **996.** Labeling of nuclear proteins in tissue slices incubated with alanine-U-C^{14} or lysine-U-C^{14}. HARRIS BUSCH, JOSEPH R. DAVIS* AND DOLORES C. ANDERSON*. *Univ. of Illinois College of Medicine.*

11:30 **997.** Relation of ribonucleic acid to the photosynthetic apparatus in Euglena gracilis. GEORGE BRAWERMAN (intr. by J. A. BEHRE). *Columbia Univ.*

Methionine and One Carbon Metabolism

TUES. A.M.—CONVENTION HALL, ROOM 201

Chairman: W. Sakami

9:00 **998.** Enzymatic reduction of methionine sulfoxides. SIMON BLACK AND EILEEN M. HARTE.* *Natl. Insts. of Health.*

9:15 **999.** Interrelations of anserine and l-methylhistidine. I. ROSABELLE MCMANUS (intr. by RONALD BENTLEY). *Univ. of Pittsburgh.*

9:30 **1000.** Transmethylation in the biosynthesis of ergothioneine. DONALD B. MELVILLE, MARTHA L. LUDWIG,* EDWARD INAMINE* AND JULIAN R. RACHELE. *Cornell Univ. Med. College.*

9:45 **1001.** Enzymatic hydrolysis of S-adenosylmethionine. S. HARVEY MUDD* AND G. L. CANTONI. *Natl. Inst. of Mental Health.*

10:00 **1002.** Enzymatic decomposition of S-adenosylmethionine. ADALINE N. MATHER (intr. by A. LINDENBAUM). *Argonne Natl. Lab.*

10:15 **1003.** Inhibition by molybdate of sulfur metabolism in Escherichia coli. KENNETH J. MONTY (intr. by P. B. PEARSON). *Johns Hopkins Univ.*

10:30 **1004.** S-Adenosyl-L-methionine in choline synthesis in vivo and in vitro. J. A. STEKOL, E. I. ANDERSON*, S. WEISS AND M. TOPOREK*. *Lankenau Hosp. Research Inst. and Inst. for Cancer Research.*

10:45 **1005.** Methionine biosynthesis in liver. AUDREY STEVENS* AND W. SAKAMI. *Western Reserve Univ.*

11:00 **1006.** Formate activating enzyme. H. R. WHITELEY*, M. J. OSBORN*, P. T. TALBERT* AND F. M. HUENNEKENS. *Univ. of Washington.*

11:15 **1007.** Role of pyridoxal phosphate in the incorporation of serine-3-C^{14} into methionine and alanine. V. M. DOCTOR. *Univ. of Texas, M. D. Anderson Hosp. and Tumor Inst.*

Lipide Chemistry

TUES. A.M.—CONVENTION HALL, ROOM 202

Chairman: J. M. McKibbin

9:00 **1008.** A study of Drosophila lipids by silicic acid chromatography. J. J. WREN* AND HERSCHEL K. MITCHELL. *California Inst. of Technology.*

9:15 **1009.** Some properties of pea phosphatidyl inositol. A. C. WAGENKNECHT AND LAWRENCE M. LEWIN (intr. by D. B. HAND). *New York State Agric. Exper. Station.*

9:30 **1010.** Determination of acetal phospholipides in tissues by phosphorus analysis. G. SCHMIDT, K. KECK,* W. A. SPENCER* AND R. BLIETZ.* *Boston Dispensary and Tufts Univ. School of Medicine.*

9:45 **1011.** Phosphatides of heart muscle. G. V. MARINETTI, J. ERBLAND* AND J. KOCHEN*. *Univ. of Rochester School of Medicine.*

10:00 **1012.** Chromatographic analysis of cardiac plasmalogens. M. H. HACK AND V. J. FERRANS.* *Tulane Univ.*

10:15 **1013.** Plant phospholipids: a comparison with those of animal tissues and yeast. B. MARUO* AND A. A. BENSON. *Pennsylvania State Univ.*

10:30 **1014.** Isolation of cytolipin H, a lipid hapten from human tumor tissue. MAURICE M. RAPPORT, NICHOLAS F. ALONZO,* LISELOTTE GRAF* AND VLADIMIR P. SKIPSKI.* *New York State Dept. of Health and Sloan-Kettering Inst.*

10:45 **1015.** A phosphatido-peptide-like fraction of renal cortex. C. G. HUGGINS (intr. by E. SHAW). *Kansas Univ. Med. School and VA Hosp., Kansas City.*

11:00 **1016.** Serologically active lipopolysaccharides of tubercle bacilli. MARY C. PANGBORN. *New York State Dept. of Health.*

11:15 **1017.** Phospholipides associated with rhodopsin. N. I. KRINSKY (intr. by A. FORBES). *Harvard Univ.* (Physiol.)

Enzymes Acting on Amino Acids and Related Substrates

TUES. A.M.—CONVENTION HALL, ROOM 300

Chairman: H. N. Christensen

9:00 **1018.** Study of reactive site of amine oxidases by methoxyamines and 1,2-alkyldiamines. E. A. ZELLER, L. M. BARBATO*, J. BARSKY*, L. A. BLANKSMA* AND J. C. LAZANAS.* *Northwestern Univ. Med. School.*

9:15 **1019.** Competitive inhibition of D-amino acid oxidase by D-amino acids. BERNARD F. GERULAT* AND CLARENCE P. BERG. *State Univ. of Iowa.*

9:30 **1020.** Purification and properties of β-hydroxyisovaleryl CoA carboxylase. ALICE DEL CAMPILLO*, EUGENE E. DEKKER* AND MINOR J. COON. *Univ. of Michigan.*

9:45 **1021.** Mechanism of O-phosphoserine phosphatase. FRANCIS C. NEUHAUS AND WILLIAM L. BYRNE (intr. by LAFAYETTE NODA). *Duke Univ. School of Medicine.*

10:00 **1022.** Enzymatic activities in chick embryos. J. R. FISHER, M. CESKA AND S. K. CHAN (intr. by SIDNEY W. FOX). *Florida State Univ.*

10:15 **1023.** Hydrolysis of carboxyalkylisothioureas by transamidinase and arginase. DAVID G. DOHERTY AND RAYMOND SHAPIRA*. *Oak Ridge Natl. Lab.*

10:30 **1024.** Competitive inhibition of kynurenine transaminase by organic acids. MERLE MASON (intr. by LILA MILLER). *Univ. of Michigan.*

10:45 **1025.** Preparation and some properties of a phosphate-activated glutaminase. FRANCIS W. SAYRE (intr. by D. G. SIMONSEN). *City of Hope Med. Ctr.*

11:00 **1026.** Mechanism of action of glutamic dehydrogenase. H. D. HOBERMAN, S. ENGLARD* AND H. J. STRECKER. *Albert Einstein College of Medicine.*

11:15 **1027.** Mechanism of the glutamic dehydrogenase reaction. HARVEY F. FISHER (intr. by PAUL D. BARTLETT). *Edsel B. Ford Inst. for Med. Research.*

11:30 **1028.** Oxygen transfer in enzymatic arsenolytic reactions. DONALD S. SLOCUM AND J. E. VARNER (intr. by F. E. DEATHERAGE). *Ohio State Univ.*

11:45 **1029.** Characterization of an insect glutamine synthetase. L. LEVENBOOK AND JEANNE KUHN. *Jefferson Med. College.* (Physiol.)

Porphyrin Biosynthesis and Bile Pigments

TUES. A.M.—CONVENTION HALL, ROOM 400

Chairman: J. M. Orten

9:00 **1030.** 5-Hydroxybenzimidazole and factor III in heme synthesis. LYNN D. ABBOTT, JR. *Med. College of Virginia.*

9:15 **1031.** Nutritional deficiencies and heme synthesis in vitro. DAN A. RICHERT AND MARTIN P. SCHULMAN. *State Univ. of New York Med. College.*

9:30 **1032.** Enzymatic synthesis of δ-aminolevulinic acid. DAVID SHEMIN, GORO KIKUCHI* AND BARBARA J. BACHMANN.* *Columbia Univ.*

9:45 **1033.** Properties of an enzyme system forming δ-aminolevulinic acid (ALA). K. D. GIBSON, W. G. LAVER AND A. NEUBERGER (intr. by S. UDENFRIEND). *St. Mary's Hosp. Med. School, London.*

10:00 **1034.** Inorganic factors in porphyrin biosynthesis. IRVING MELCER* AND JAMES M. ORTEN. *Wayne State Univ. College of Medicine.*

10:15 **1035.** Copper content of purified δ-aminolevulinic acid dehydrase. ARTHUR A. IODICE*, DAN A. RICHERT AND MARTIN P. SCHULMAN. *State Univ. of New York Med. College.*

10:30 **1036.** Enzymic formation of protoporphyrin from coproporphyrinogen III. S. GRANICK AND D. MAUZERALL*. *Rockefeller Inst.*

10:45 **1037.** Spectrophotometric studies of serum bilirubin. V. AULIS, K. HYVARINEN* AND JOHN G. REINHOLD. *Univ. of Pennsylvania.*

11:00 **1038.** The presence of d-urobilinogen in the human cecum. C. J. WATSON. *Univ. of Minnesota.*

Open House by Laboratories

See page 672 for complete schedule

Headquarters Hotels

Benjamin Franklin: Pharmacology and Physiology
Sheraton Biochemistry and Nutrition
Bellevue-Stratford: Pathology and Immunology

Tuesday Afternoon, April 15, 1:30 p.m.

Amino Acid Metabolism—Glutamic, Aspartic, Etc.

TUES. P.M.—CONVENTION HALL, ROOM D

Chairman: A. Meister

1:30 **1039.** γ-Aminobutyric acid- α-ketoglutarate transaminase in brain. CLAUDE F. BAXTER* AND EUGENE ROBERTS. *City of Hope Med. Ctr.*

1:45 **1040.** Hormonal action on the distribution of C^{14}-α-aminoisobutyric acid in rats. THOMAS R. RIGGS AND LOIS M. WALKER*. *Univ. of Michigan.*

2:00 **1041.** Some factors influencing excretion of beta-aminoisobutyric acid (BAIB). KAY FINK AND ROBERT M. FINK. *Univ. of Calif. and VA Hosp., Long Beach.*

2:15 **1042.** Role of β-methyl aspartate in the metabolism of glutamate by Clostridium tetano-morphum. H. A. BARKER, R. D. SMYTH* and R. MARILYN WILSON.* *Univ. of California.*

2:30 **1043.** Metabolism of C^{14}-labeled hydroxyaspartic acid. H. J. SALLACH. *Univ. of Wisconsin Med. School.*

2:45 **1044.** Effect of different sites of administration on metabolism of DL-glutamic acid-2-C^{14} in rats. WILLIAM E. WILSON AND ROGER E. KOEPPE (intr. by T. P. NASH, JR.). *Univ. of Tennessee.*

3:00 **1045.** Enzymatic formation and in vivo incorporation of hydroxyproline. CHOZO MITOMA AND THOMAS E. SMITH.* *Natl. Heart Inst.*

3:15 **1046.** Isolation of a urinary metabolite of beta-aminoproprionitrile (BAPN). JOHN T. GARBUTT*, J. J. LALICH, S. H. LIPTON,* AND F. M. STRONG. *Univ. of Wisconsin.*

3:30 **1047.** The catalysis by flavinmononucleotide of the photooxidation of nitrogenous compounds. W. R. FRISELL AND C. G. MACKENZIE. *Univ. of Colorado School of Medicine.*

3:45 **1048.** Enzymatic conversion of ethanolamine to glycolaldehyde. S. A. NARROD* AND W. B. JAKOBY. *Natl. Inst. of Dental Research and Natl. Inst. of Arthritis and Metabolic Diseases.*

Krebs Cycle

TUES. P.M.—CONVENTION HALL, ROOM E

Chairman: H. G. Wood

1:30 **1049.** Metabolic interrelationships in acetate-adapted E. coli. ALVIN J. GLASKY.* ALEXANDER EICHHOLZ* AND MAX E. RAFELSON, JR. *Univ. of Illinois College of Medicine.*

1:45 **1050.** Biochemical lesion in an acetate requiring mutant of Escherichia coli. ANNE GOUNARIS AND LOWELL P. HAGER. (intr. by J. T. EDSALL). *Harvard Univ.*

2:00 **1051.** Factors regulating hepatic acetate oxidation. E. J. MASORO AND JAMES M. FELTS. *Tufts Univ. School of Medicine* (Physiol.)

2:15 **1052.** Reductive acetylation of lipoic acid by pyruvic dehydrogenase. DEXTER S. GOLDMAN. *V.A. Hosp., Madison.*

2:30 **1053.** Pyruvic kinase reaction. J. T. MCQUATE (intr. by D. A. GOLDTHWAIT). *Western Reserve Univ.*

2:45 **1054.** Enzymatic formation of an ether of enolpyruvate and uridine diphosphoacetylglucosamine. JACK L. STROMINGER. *Washington Univ. School of Medicine.*

3:00 **1055.** Restoration of pyruvate utilization in heart sarcosomes by dextrorotatory lipoic acid. OSCAR K. REISS (intr. by LESLIE HELLERMAN). *Johns Hopkins School of Medicine.*

3:15 **1056.** Purification and properties of phosphoenolpyruvate (PEP) D-erythrose-4-phosphate (E-4-P) aldolase. P. R. SRINIVASAN* AND D. B. SPRINSON. *Columbia Univ.*

3:30 **1057.** Reaction of thiamine with pyruvate. RALPH G. YOUNT* AND DAVID E. METZLER. *Iowa State College.*

3:45 **1058.** Enzymatic formation of oxalacetic acid by non-DPN malic dehydrogenase of M. lysodeikticus. DAVID V. COHN (intr. by HAROLD W. BARRETT). *VA Hosp. and Univ. of Kansas Med. School.*

4:00 **1059.** A sensitive method for estimation of oxaloacetate. D. F. TAPLEY* AND G. KALNITSKY. *Oxford Univ., England.*

4:15 **1060.** Isocitric dehydrogenases of the placenta. CLAUDE A. VILLEE, JANET M. LORING* AND ANITA SARNER.* *Harvard Med. School.*

SYMPOSIUM: Acid Mucopolysaccharides of Animal Origin

TUES. P.M.—CONVENTION HALL, ROOM 201

Chairman: K. Meyer

1:30 **1061.** Introduction. K. MEYER.

1:35 **1062.** Structure of hyaluronic acid. K. MEYER. *Columbia Univ.*

2:05 **1063.** Structure of chondroitin sulfates. P. HOFFMAN. *Columbia Univ.*

2:35 **1064.** Structure of heparin. R. JEANLOZ. *Massachusetts Gen. Hosp.*

3:05 **1065.** Physical chemistry of hyaluronate. A. BALASZ. *Retina Fndn.*

3:35 **1066.** Metabolism of hyaluronate and chondroitin sulfate. A. DORFMAN. *Univ. of Chicago.*

4:05 **1067.** Protein complexes of chondroitin sulfate. M. SCHUBERT. *New York Univ.-Bellevue Med. Ctr.*

Enzymes: Chemistry and Mechanism of Action

TUES. P.M.—CONVENTION HALL, ROOM 202

Chairman: C. B. Anfinsen, Jr.

1:30 **1068.** Determination of reaction mechanism by reflection coefficients. JOSEPH J. HIGGINS (intr. by DAVID R. GODDARD). *Univ. of Pennsylvania.*

1:45 **1069.** Relations of isotopic exchange rates at equilibrium to enzymic mechanisms. P. D. BOYER AND R. C. MILLS. *Univ. of Minnesota.*

2:00 **1070.** Absolute configuration of the enantiomorphic carbanions involved in the aldolase and triose phosphate isomerase catalyzed reactions. BEN BLOOM AND YALE J. TOPPER. *Natl. Insts. of Health.*

2:15 **1071.** Specificity requirements of acceptors for dextransucrase. W. BROCK NEELY (intr. by GRANT N. SMITH). *Dow Chemical Co.*

2:30 **1072.** Subtilisin-modified ribonuclease. F. M. RICHARDS. *Yale Univ.*

2:45 **1073.** Isotopically labeled active sites of yeast alcohol dehydrogenase. BERT L. VALLEE, JEREMIAS H. R. KÄGI* AND FREDERIC L. HOCH. *Harvard Med. School.*

3:00 **1074.** Deuterium studies with the β-hydroxybutyryl dehydrogenase and condensing enzyme reactions. ABRAHAM MARCUS* AND JOSEPH R. STERN. *Univ. of Chicago and Western Reserve Univ.*

3:15 **1075.** Fluorescent properties of lactic dehydrogenase-DPNH complexes. ALFRED D. WINER*, GEORGE W. SCHWERT AND WILLIAM B. NOVOA.* *Duke Univ. School of Medicine.*

3:30 **1076.** DPN binding by yeast glyceraldehyde-3-phosphate dehydrogenase. ANNE STOCKELL (intr. by A. N. RICHARDS). *Univ. of Pennsylvania.*

3:45 **1077.** Reactions of methyl mercaptan catalyzed by glyceraldehyde-3-phosphate and aspartic β-semialdehyde dehydrogenases. EDITH C. WOLF (intr. by HARVEY A. ITANO). *Natl. Insts. of Health.*

4:00 **1078.** Dissociation of glutamic dehydrogenase. CARL FRIEDEN (intr. by MILDRED COHN). *Washington Univ. Med. School.*

Nucleic Acid and Nucleoprotein Chemistry

TUES. P.M.—CONVENTION HALL, ROOM 300

Chairman: M. Laskowski

1:30 **1079.** Fractionation of ribonucleic acids from yeast. FRANK F. DAVIS (intr. by JAMES B. ALLISON). *Rutgers State Univ.*

1:45 **1080.** Countercurrent fractionation of ribonucleic acids. ROBERT C. WARNER AND PAVA VAIMBERG.* *New York Univ. College of Medicine.*

2:00 **1081.** Minor constituents of ribonucleic acids. WALDO E. COHN. *Oak Ridge Natl. Lab.*

2:15 **1082.** Terminal nucleosides of ribonucleic acids. ARTHUR M. CRESTFIELD* AND FRANK WORTHINGTON ALLEN. *Univ. of California School of Medicine.*

2:30 **1083.** The ultracentrifugal analysis of ribonucleoproteins from two subfractions of rat liver microsomes. MARY L. PETERMANN, MARY G. HAMILTON*, BARBARA B. BURKHOLDER* AND ELLEN I. EASTER.* *Sloan-Kettering Inst.*

2:45 **1084.** Properties of microsomal particles from pea seedlings. PAUL O. P. TS'O*, JAMES BONNER AND JEROME VINOGRAD.* *California Inst. of Technology.*

3:00 **1085.** Physical and chemical characterization of nucleoprotein particles isolated from microorganisms. ROBERT M. BOCK AND WILLIAM C. GILLCHRIEST*. *Univ. of Wisconsin.*

3:15 **1086.** Chromatographic fractionation of total nucleic acids of normal and tumor tissue. KENDRIC C. SMITH* AND HENRY S. KAPLAN. *Stanford Univ. School of Medicine.* (Pathol.)

3:30 **1087.** Fractionation of deoxyribonucleic acids. CHARLES F. CRAMPTON, ANN MARIE

BENSON,* JANET L. RODEHEAVER* AND A. E. WADE.* *Univ. of Florida Med. School.*

3:45 **1088.** Sedimentation studies on fractions of deoxyribonucleic acid (DNA). HERBERT S. ROSENKRANZ* AND AARON BENDICH. *Sloan-Kettering Inst.*

4:00 **1089.** Effect of molecular size on incorporation and biological activity of pneumococcal transforming factor. J. MARMUR,* M. LITT* AND P. DOTY. *Harvard Univ.*

4:15 **1090.** Heterogeneity of calf thymus nucleoprotein. BOHDAN BAKAY AND LOUISE B. KIRSCHNER (intr. by N. F. FLOYD). *Inst. for Cancer Research and Lankenau Hosp. Research Inst.*

Vitamin E: Vitamin B_{12} and Intrinsic Factor

TUES. P.M.—CONVENTION HALL, ROOM 400

Chairman: P. L. Harris

1:30 **1091.** Mn†† requirement for synthesis in vitro of ascorbic acid by liver extracts from vitamin E-deficient rats. PAUL MCCAY,* MARY CARPENTER* AND RANWEL CAPUTTO. *Okla. Med. Research Fndn.*

1:45 **1092.** Metabolic changes in vitamin E deficiency. ALBERT D. WILLIAMS*, KAY FINK AND ROBERT M. FINK. *Univ. of California and VA Hosp., Long Beach.*

2:00 **1093.** Dehydrogenase levels in normal and vitamin E-deficient rabbits. H. ROSENKRANTZ. *Worcester Fndn. for Exptl. Biology.*

2:15 **1094.** Plasma tocopherol, hemolysis and dietary unsaturated lipid relationships in man. H. K. HORWITT, C. C. HARVEY* AND B. J. MEYER.* *Elgin State Hosp.*

2:30 **1095.** Vitamin E, factor 3 and succinate oxidation. L. M. CORWIN AND K. SCHWARZ (intr. by H. M. KALCKAR). *Natl. Inst. of Arthritis and Metabolic Diseases.*

2:45 **1096.** Metabolic studies of vitamin B_{12} and depinar in multiple sclerosis (MS) and clinically healthy subjects. JOHN S. O'CONNOR,* ROBERT L. DAVIS,* ORTHELLO R. LANGWORTHY* AND BACON F. CHOW. *Johns Hopkins Univ. and VA Hosp.* (Immunol.)

3:00 **1097.** Vitamin B_{12} and phospholipids in developing chick embryos. DAVID W. YESAIR,* DON E. MCOSKER* AND LOUISE J. DANIEL. *Cornell Univ.*

3:15 **1098.** Effect of vitamin B_{12} deprivation on blood pyruvic and lactic acid. CAROL C. CHANG,* ROBERT L. DAVIS,* JENG M. HSU* AND BACON F. CHOW. *Johns Hopkins Univ. and VA Hosp.*

3:30 **1099.** Distribution of Co^{60} B_{12} in rabbit tissues. HAROLD L. ROSENTHAL. *Rochester Gen. Hosp.*

3:45 **1100.** In vitro assay of hog intrinsic factor concentrates employing paper electrophoresis and radioactive vitamin B_{12}. GRANT H. BARLOW AND KENNETH J. FREDERICK (intr. by FLOYD C. MCINTIRE). *Abbott Labs.*

4:00 **1101.** Intrinsic factor preparations. WILLIAM L. WILLIAMS AND LEON ELLENBOGEN.* *American Cyanamid Co.*

4:15 **1102.** Purification of intrinsic factor. W. W. BROMER AND L. G. SINN (intr. by G. H. A. CLOWES). *Lilly Research Labs.*

Biochemistry Society Business Meeting

TUESDAY, 4:30 P.M.—CONVENTION HALL, ROOM 201

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

See program on page 544

Wednesday Morning, April 16, 9:00 a.m.

Amino Acid Metabolism—Histidine, Phenylalanine, Etc.

WED. A.M.—CONVENTION HALL, ROOM D

Chairman: B. D. Davis

9:00 **1103.** Biosynthesis of the imidazole ring of histidine. H. S. MOYED (intr. by B. D. DAVIS). *Harvard Med. School.*

9:15 **1104.** Synthesis and metabolism of a histamine metabolite, 1-methyl-4-(β-aminoethyl) imidazole. ZULEIKA ROTHSCHILD* AND RICHARD W. SCHAYER. *Merck Inst.*

9:30 **1105.** Intermediate products in the enzymatic degradation of urocanic acid. ROBERT H. FEINBERG (intr. by H. S. OLCOTT). *Univ. of California School of Medicine and Palo Alto Med. Research Fndn.*

9:45 **1106.** Concentration and hydroxylation of free phenylalanine in adrenal glands. J. H. FELLMAN AND M. K. DEVLIN (intr. by E. S. WEST). *Univ. of Oregon Med. School.*

10:00 **1107.** Tyrosine biosynthesis in Escherichia coli: enzymatic oxidation of prephenic acid (PPA) to p-hydroxyphenylpyruvic acid (HPP). ILSE SCHWINCK* AND ELIJAH ADAMS. *New York Univ. College of Medicine.*

10:15 **1108.** Tyrosinosis in guinea pigs induced by diethyldithiocarbamate. BERT N. LA DU AND VINCENT G. ZANNONI.* *Natl. Inst. of Arthritis and Metabolic Diseases.*

10:30 **1109.** Oxygen transfer by homogentisate oxidase. D. I. CRANDALL, K. YASUNOBU,* R. C. KRUEGER* AND H. S. MASON. *Univ. of Cincinnati College of Medicine and Univ. of Oregon Med. School.*

10:45 **1110.** Diaminopimelic acid biosynthesis. CHARLES GILVARG. *New York Univ. College of Medicine.*

11:00 **1111.** Enzymatic synthesis of spermidine from methionine and putrescine by extracts of E. coli. H. TABOR, C. W. TABOR* AND S. M. ROSENTHAL. *Natl. Insts. of Health.*

11:15 **1112.** Nicotine biogenesis. B. LAMBERTS* AND R. U. BYERRUM. *Michigan State Univ.*

Lipide Metabolism

WED. A.M.—CONVENTION HALL, ROOM E

Chairman: W. M. Sperry

9:00 **1113.** Absorption of C^{14}-lipids in the rat. JOHN G. CONIGLIO AND DEBORAH L. CATE.* *Vanderbilt Univ. School of Medicine.*

9:15 **1114.** Biliary phospholipids: in relation to exogenous phospholipids and phosphate. FUMIO NAKAYAMA (intr. by C. G. JOHNSTON). *Wayne State Univ. College of Medicine* (Physiol.)

9:30 **1115.** Turnover rates of plasma lipids. MARGARET W. BATES (intr. by ROBERT E. OLSON). *Univ. of Toronto, Canada.*

9:45 **1116.** Presence of phosphatidic acid in mouse tissue. LOWELL E. HOKIN AND MABEL R. HOKIN.* *Univ. of Wisconsin.*

10:00 **1117.** Enzymatic synthesis of choline-containing plasmalogen. JOHN Y. KIYASU (intr. by H. GUY WILLIAMS-ASHMAN). *Univ. of Chicago.*

10:15 **1118.** Incorporation of C^{14}-labeled galactose-1-P and uridine diphosphate galactose into brain lipides. W. W. CLELAND* AND E. P. KENNEDY. *Univ. of Chicago.*

10:30 **1119.** Incorporation of diethanolamine into liver lipides. C. ARTOM, H. B. LOFLAND AND J. A. OATES. *Bowman Gray School of Medicine.*

10:45 **1120.** Conversion of serine to ethanolamine and its derivatives in rat liver. MARTIN J. NEMER AND DAVID ELWYN (intr. by H. C. TRIMBLE). *Harvard Med. School.*

11:00 **1121.** Enzymatic synthesis of inositol phosphatide. BERNARD W. AGRANOFF AND ROY M. BRADLEY (intr. by ROSCOE O. BRADY). *Natl. Inst. of Neurological Diseases and Blindness.*

11:15 **1122.** Phospholipide formation during cell division. RALPH M. JOHNSON AND S. ALBERT.* *Detroit Inst. of Cancer Research.*

11:30 **1123.** Role of phospholipides in the metabolism of Penicillium chrysogenum. W. L. GABY, R. N. NAUGHTEN* AND C. LOGAN.* *Hahnemann Med. College and Hosp.* (Immunol.)

Chemistry and Metabolism of Nucleic Acids and Derivatives

WED. A.M.—CONVENTION HALL, ROOM 101

Chairman: G. Schmidt

9:00 **1124.** Proton magnetic spectra of purines, pyrimidines and nucleotides. CHRISTINE D. JARDETSKY AND OLEG JARDETSKY (intr. by F. NORMAN BRIGGS). *Retina Fndn. and Harvard Med. School.* (Pharmacol.)

9:15 **1125.** New graphical methods in erythrocyte nucleotide chromatography. J. E. MULDREY,* C. C. SPRAGUE* AND W. B. WENDEL. *Tulane Univ.*

9:30 **1126.** Synthesis of cytidine-2-C^{14}-ribosyl-T and adenosine-ribosyl-T. JOHN F. CODINGTON AND MILTON P. GORDON (intr. by LISBE F. CAVALIERI). *Sloan-Kettering Inst.*

9:45 **1127.** Peptides associated with nucleotides in rat liver extracts. CLEMENT WEINSTEIN,* DAVID HAMMOND,* JAMES I. BERKMAN,* PAUL M. GALLOP* AND SAM SEIFTER. *Long Island Jewish Hosp., and Albert Einstein College of Medicine.*

10:00 **1128.** Metabolic heterogeneity of bacterial nucleic acids. JOAN L. COUNTRYMAN* AND ELLIOT VOLKIN. *Oak Ridge Natl. Lab.*

10:15 **1129.** Chemical synthesis of oligo-thymidine nucleotides and their degradation by venom phosphodiesterase. H. G. KHORANA, G. M. TENER*, W. E. RAZZELL* AND R. MARKHAM*. *B. C. Research Council, Vancouver.*

10:30 **1130.** Specificity of DNAase I. J. L. POTTER*, U. R. LAURILA* AND M. LASKOWSKI. *Marquette Univ. School of Medicine.*

10:45 **1131.** Degradation of DNA by the Ehrlich ascites tumor. P. G. STANSLY. Detroit *Inst. of Cancer Research.*

11:00 **1132.** Ribonuclease assays. SHERMAN R. DICKMAN AND BARBARA RING*. *Univ. of Utah College of Medicine.*

11:15 **1133.** Inhibition studies of ribonuclease. J. P. HUMMEL, M. FLORES* AND G. NELSON*. *State Univ. of Iowa.*

SYMPOSIUM: Recent Developments in Separation Methods

WED. A.M.—CONVENTION HALL, ROOM 201

Chairman: L. C. Craig

9:00 **1134.** Opening remarks by the Chairman. L. C. CRAIG.

9:10 **1135.** Automatic recording apparatus for use in chromatography of amino acids. S. MOORE, D. H. SPACKMAN AND W. H. STEIN. *Rockefeller Inst. for Med. Research.*

9:40 **1136.** Protein chromatography on ion exchange cellulose. H. A. SOBER AND E. A. PETERSON. *Natl. Cancer Inst.*

10:10 **1137.** Equilibrium sedimentation in density gradients; a method for the separation, analysis and characterization of macromolecules and viruses. J. VINOGRAD, M. MESELSON AND F. W. STAHL. *California Inst. of Technology.*

10:40 **1138.** Design and use of a 1000 tube countercurrent distribution apparatus. L. C. CRAIG AND T. P. KING. *Rockefeller Inst. for Med. Research.*

Oxidative Phosphorylation and Phosphate Transfer

WED. A.M.—CONVENTION HALL, ROOM 202

Chairman: P. D. Boyer

9:00 **1139.** "Opposing resonance." UNA L. HART (intr. by I. S. KLEINER). *New York Med. College.*

9:15 **1140.** An exchange reaction between inorganic pyrophosphate (PP) and adenosine triphosphate (ATP) in rat liver microsomes. G. DAVID NOVELLI AND A. N. BEST*. *Oak Ridge Natl. Lab.*

9:30 **1141.** Reversibility of phosphate transfer between phosvitin and ATP. MURRAY RABINOWITZ (intr. by JOHN D. GREGORY). *Rockefeller Inst.*

9:45 **1142.** ATP transphosphorylases. STEPHEN A. KUBY AND THEODORE A. MAHOWALD.* *Univ. of Wisconsin.*

10:00 **1143.** Synthesis and function of adenyl-luciferin and adenyl-oxyluciferin. WILLIAM C. RHODES* AND WILLIAM D. MCELROY. *Johns Hopkins Univ.*

10:15 **1144.** Interrelationship of inorganic phosphate and adenine nucleotide pools of mitochondria. BERTON C. PRESSMAN (intr. by W. H. PETERSON). *Univ. of Wisconsin.*

10:30 **1145.** Metal interactions of a mitochondrial enzyme system. FREDERIC L. HOCH, H. RICHARD TYLER* AND BERT L. VALLEE. *Harvard Med. School.*

10:45 **1146.** Mitochondrial binding of dinitrophenol-C^{14}. HENRY KAMIN AND P. HANDLER. *VA Hosp. and Duke Univ. School of Medicine.*

11:00 **1147.** Oxidative phosphorylation in mitochondria of lactating and non-lactating mammary tissue. EDWARD I. CIACCIO* AND WALTER L. NELSON. *Cornell Univ.*

11:15 **1148.** The ATP-ADP exchange reaction of oxidative phosphorylation. C. L. WADKINS* AND A. L. LEHNINGER. *Johns Hopkins School of Medicine.*

11:30 **1149.** Incorporation of P^{32}-orthophosphate into the phosphatides of rat liver mitochondria during oxidative phosphorylation. THOMAS E. CONOVER* AND ROBERT F. WITTER. *Univ. of Rochester School of Medicine.*

11:45 **1150.** Energy coupled electron transport in Clostridium kluyveri. C. W. SHUSTER* AND I. C. GUNSALUS. *Univ. of Illinois.*

Heparin and Aldonic Acid Metabolism

WED. A.M.—CONVENTION HALL, ROOM 400

Chairman: R. W. Jeanloz

9:00 **1151.** In vitro incorporation of S^{35}-sulfate into heparin. LEONARD SPOLTER* AND WALTER MARX. *Univ. of Southern California.*

9:15 **1152.** Attempts to extract a mammalian heparinase. EUNICE C. SCHUYTEMA AND IRA B. CUSHING (intr. by D. W. MACCORQUODALE). *Abbott Labs.*

9:30 **1153.** Metabolism of heparin in mouse mast cell tumor. EDWARD D. KORN. *Natl. Heart Inst.*

9:45 **1154.** Chemical structure of β-heparin. R. W. JEANLOZ AND P. J. STOFFYN.* *Harvard Med. School and Massachusetts Gen. Hosp.*

10:00 **1155.** Heparitin sulfate. ALFRED LINKER, PHILIP HOFFMAN* AND KARL MEYER. *Columbia Univ.*

10:15 **1156.** Relationship of glucosamine and galactosamine to collagen formation. NANCY L. NOBLE AND ROBERT J. BOUCEK (intr. by W. B. DEICHMANN). *Howard Hughes Med. Inst. (Pharmacol.)*

10:30 **1157.** Biosynthesis of hyaluronic acid in cell-free extracts of group A. streptococci. ALVIN MARKOVITZ*, J. A. CIFONELLI* AND ALBERT DORFMAN. *LaRabida-Univ. of Chicago Inst.*

10:45 **1158.** Conversion of D-glucuronolactone, L-gulonolactone and L-ascorbic acid to glucose. PETER G. DAYTON*, FRANK EISENBERG, JR. AND J. J. BURNS. *Natl. Insts. of Health and Coldwater Mem. Hosp.*

11:00 **1159.** Conversion of inositol to D-glucuronic acid and L-gulonic acid in vivo. J. J. BURNS, NATALIE TROUSOF*, NICHOLAS PAPADOPOULOS* AND CAROLE EVANS*. *Natl. Heart Inst. and New York Univ. Research Serv. Goldwater Mem. Hosp.*

11:15 **1160.** Enzymatic studies on conversion of L-gulonic acid to L-xylulose. GILBERT ASHWELL, JULIAN KANFER* AND J. J. BURNS. *Natl. Insts. of Health.*

11:30 **1161.** Enzymatic synthesis of N-acetylneuraminic acid (sialic acid). D. G. COMB* AND S. ROSEMAN. *Rackham Arthritis Res. Unit and Univ. of Michigan.*

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Press Room

Room 304, Convention Hall

Wednesday Afternoon, April 16, 1:30 p.m.

Metabolism of Purines and Purine Nucleosides and Nucleotides

WED. P.M.—CONVENTION HALL, ROOM D

Chairman: J. M. Buchanan

1:30 **1162.** Purine metabolism in Ehrlich ascites tumor cells. HELEN HARRINGTON*, R. Y. THOMSON*, J. N. DAVIDSON* AND P. S. LAVIK. *Western Reserve Univ. and Univ. of Glasgow, Scotland.*

1:45 **1163.** Effect of nicotinamide on in vivo incorporation of formate into adenine. L. SHUSTER* AND A. GOLDIN. *Natl. Cancer Inst.* (Pharmacol.)

2:00 **1164.** Enzymatic synthesis and degradation of 2-methylamine-6-aminopurine. CHARLES N. REMY (intr. by W. W. WESTERFELD). *VA Hosp. and State Univ. of New York.*

2:15 **1165.** Metabolism of adenine-1-N-oxide. DORIS DUNN*, M. HELEN MAGUIRE* AND GEORGE BOSWORTH BROWN. *Sloan-Kettering Inst.*

2:30 **1166.** Phosphorolytic cleavage of uric acid riboside by mammalian enzymes. LEONARD LASTER AND ALBERTA BLAIR (intr. by M. R. STETTEN). *Natl. Insts. of Health.*

2:45 **1167.** Conversion of guanosine 5′-phosphate (G5′P) to inosine 5′-phosphate (I5′P) as part of a biosynthetic cycle. J. MAGER* AND BORIS MAGASANIK. *Harvard Med. School.*

3:00 **1168.** Feedback mechanisms influencing purine ribotide synthesis. JAMES B. WYNGAARDEN, HAROLD R. SILBERMAN AND JOHN H. SADLER (intr. by J. LOGAN IRWIN). *Duke Univ. School of Medicine.*

3:15 **1169.** Pigeon liver adenosine kinase. E. BOGGIANO, W. BARG AND E. C. DE RENZO (intr. by PAUL H. BELL). *American Cyanamid Co.*

3:30 **1170.** Pyridine nucleotides formed during in vivo synthesis of DPN in the mouse. THOMAS A. LANGAN, JR., AND LOUIS SHUSTER (intr. by NATHAN O. KAPLAN). *Brandeis Univ. and Natl. Cancer Inst.*

3:45 **1171.** Biosynthesis of diphosphopyridine nucleotide. JACK PREISS (intr. by C. E. ANDERSON). *Duke Univ. School of Medicine.*

4:00 **1172.** Enzymatic interaction of histamine and coenzyme I with formation of a new dinucleotide. S. G. A. ALIVISATOS (intr. by I. M. KLOTZ). *Mt. Sinai Med. Research Fndn. and Chicago Med. School.*

Methods of Protein and Amino Acid Chemistry

WED. P.M.—CONVENTION HALL, ROOM E

Chairman: R. J. Block

1:30 **1173.** Determination of albumin in cirrhotic sera by the vasoflavine fluorescence enhancement procedure. JOSEPH J. BETHEIL AND ALBERT HANOK (intr. by H. J. STRECKER). *Albert Einstein College of Medicine and Bronx Municipal Hosp. Ctr.*

1:45 **1174.** Comparative studies of partial hydrolysates of Bence-Jones proteins. MELVIN FRIED*, FRED R. FRANKEL* AND FRANK W. PUTMAN. *College of Medicine, Univ. of Florida.*

2:00 **1175.** Standardization of serum protein analysis by paper electrophoresis. HAROLD W. CLARK, T. MCP. BROWN AND R. H. WICHELHAUSEN (intr. by L. SWELL). *George Washington Univ. and VA Hosp., Washington.*

2:15 **1176.** Sponge electrophoresis in multigradient systems and in enzyme purification. HAROLD M. DAVIDSON (intr. by SIEGFRIED J. THANNHAUSER). *Tufts Univ. School of Medicine and New England Ctr. Hosp.*

2:30 **1177.** Influence of the supporting medium on the fractionation of proteins by zone electrophoresis. ELIZABETH ESHELMAN MILLER* AND PETER BERNFELD. *Bio-Research Inst.*

2:45 **1178.** Nitrogen content of serum proteins separated by continuous-flow electrophoresis. F. WILLIAM SUNDERMAN, JR.*, F. WILLIAM SUNDERMAN, E. A. FALVO* AND C. J. KALLICK*. *Jefferson Med. College.*

3:00 **1179.** Some basic aspects of centrifugally accelerated electrochromatography. H. J. MCDONALD AND L. P. RIBEIRO*. *Loyola Univ.*

3:15 **1180.** A variable gradient device for chromatography. ELBERT A. PETERSON AND HERBERT A. SOBER. *Natl. Cancer Inst.*

3:30 **1181.** Urea solutions as titration media. MILTON LEVY. *New York Univ. College of Dentistry.*

3:45 **1181a.** Gas chromatography in amino acid analysis. M. BIER AND PRISCILLA TEITELBAUM*. *Fordham Univ. and Inst. of Applied Biology.*

4:00 **1182.** Automatic recording in serial colorimetric analysis. GAIL LORENZ MILLER AND C. L. CUMMINGS.* *U. S. Army, QM Res. and Eng. Ctr., Natick, and Insco Co., Groton, Mass.*

4:15 **1183.** Withdrawn.

Cholesterol and Bile Acids

WED. P.M.—CONVENTION HALL, ROOM 101

Chairman: K. Bloch

1:30 **1184.** Partial purification of an enzyme system for cholesterol synthesis. JOHN W. PORTER, HAROLD J. KNAUSS* AND GERTRUDE WASSON*. *VA Hosp. and Univ. of Wisconsin.*

1:45 **1185.** Synthesis and metabolism of 22-ketocholesterol-23-C^{14}. R. R. BECKER, G. J. KAUTSKY*, C. BOUBOULIS*, A. V. SUNTHANKAR* AND C. G. KING. *Columbia Univ.*

2:00 **1186.** Metabolism of Δ^4-cholestene-3-one-4-C^{14} in a human subject. R. S. ROSENFELD, LEON HELLMAN* AND T. F. GALLAGHER. *Sloan-Kettering Inst.*

2:15 **1187.** Isolation and identification of corticosterone obtained after incubation of cholesterol-21^{14} C with bovine adrenal tissue. FRANK M. GANIS AND MICHAEL RADAKOVICH (intr. by F. L. HAVEN). *Univ. of Rochester School of Medicine.*

2:30 **1188.** Enzymatic reduction of β-hydroxy-β-methyl glutaryl coenzyme A. (HMG-CoA) to mevalonic acid in yeast. J. J. FERGUSON, JR.*, I. F. DURR* AND H. RUDNEY. *Western Reserve Univ.*

2:45 **1189.** Phosphorylated derivatives of mevalonic acid. ALVAH H. PHILLIPS*, T. T. TCHEN* AND KONRAD BLOCH. *Harvard Univ.*

3:00 **1190.** Incorporation of mevalonic-acid-2-C^{14} into cholesterol in man. LEWIS I. GIDEZ*, HOWARD A. EDER AND WALTON W. SHREEVE. *Brookhaven Natl. Lab. and Albert Einstein College of Medicine.*

3:15 **1191.** Biosynthesis of radioactive estradiol and cholesterol by testicular homogenates from C-14 mevalonic acid. JOSEPH L. RABINOWITZ AND JAMES B. RAGLAND*. *Baylor Univ. College of Medicine, and Methodist Hosp., Houston.*

3:30 **1192.** Separation of bile acids on impregnated glass fiber filter paper. JAMES G. HAMILTON AND JULIUS W. DIECKERT (intr. by GRACE A. GOLDSMITH). *Tulane Univ. School of Medicine, and USDA, SURDD,* New Orleans. (Nutr.)

3:45 **1193.** Bile acids. Structure of acid IV and other isomeric 6,7-diols. S. L. HSIA*, FRED R. HILL*, WILLIAM H. ELLIOTT AND SIDNEY A. THAYER. *St. Louis Univ. School of Medicine.*

4:00 **1194.** A new metabolite from deoxycholic acid. R. L. RATLIFF*, P. D. RAY*, J. T. MATSCHINER*, W. H. DOTY* AND EDWARD A. DOISY. *St. Louis Univ. School of Medicine.*

4:15 **1195.** Production of acids I and II in rats on highly purified rations. E. A. DOISY, JR., M. W. YIN* AND W. M. FOGARTY, JR.* *St. Louis Univ. School of Medicine.*

Amino Acid Activation and Protein Synthesis

WED. P.M.—CONVENTION HALL, ROOM 201

Chairman: L. L. Miller

1:30 **1196.** Synthesis and enzymatic reactions of adenyl-amino acids. MARVIN A. KARASEK*, PAUL CASTELFRANCO* AND ALTON MEISTER. *Tufts Univ. School of Medicine.*

1:45 **1197.** Reaction of tryptophan with tryptophan-activating enzyme bound acceptor. SAMUEL B. WEISS*, GEORGE ACS* AND FRITZ LIPMANN. *Rockefeller Inst.*

2:00 **1198.** Transfer of amino acid-C^{14} from labeled adenyl-amino acid to proteins. PAUL CASTELFRANCO* AND KIVIE MOLDAVE. *Tufts Univ. School of Medicine.*

2:15 **1199.** Glycine activation by extracts of Achromobacter fischeri. M. J. CORMIER (intr. by J. R. TOTTER). *Oak Ridge Natl. Lab.*

2:30 **1200.** Intermediates in protein synthesis: alanine activation and an active ribonucleic acid fraction. R. W. HOLLEY AND P. PROCK*. *U. S. Plant, Soil and Nutrition Lab. and Cornell Univ.*

2:45 **1201.** Enzymatic synthesis of an RNA-amino acid complex. E. J. OFENGAND*, F. H. BERGMANN* AND P. BERG. *Washington Univ. School of Medicine.*

3:00 **1202.** Incorporation of amino acids into ribonucleic acid. RICHARD SCHWEET, EDWARD GLASSMAN* AND ESTHER ALLEN*. *City of Hope Med. Ctr.*

3:15 **1203.** Formation of nucleotide end groups and incorporation of amino acids into soluble RNA. L. I. HECHT*, M. L. STEPHENSON* AND P. C. ZAMECNIK. *Massachusetts Gen. Hosp.*

3:30 **1204.** Vitamin B_{12} and protein biosynthesis. S. R. WAGLE*, RANJAN MEHTA* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

Electron Transport

WED. P.M.—CONVENTION HALL, ROOM 202

Chairman: E. G. Ball

1:30 **1205.** Acceptor sites in the succinoxidase system. A. GIUDITTA* AND EDNA B. KEARNEY. *Edsel B. Ford Inst.*

1:45 **1206.** Diaphorase activities in liver cytoplasmic fractions. LARS ERNSTER (intr. by W. F. GOEBEL). *Wenner-Gren Inst., Sweden.*

2:00 **1207.** A requirement for phospholipid in the restoration of succinoxidase activity by mitoquinone (Q_{275}). F. L. CRANE AND K. S. AMBE*. *Univ. of Wisconsin.*

2:15 **1208.** A lipoprotein obtained from the succinic dehydrogenase complex. R. E. BASFORD (intr. by P. W. WILSON). *Univ. of Wisconsin.*

2:30 **1209.** Q_{275} (mitoquinone), a new member of the mitochondrial electron transport system. Y. HATEFI, R. LESTER AND T. RAMASARMA (intr. by R. A. ALBERTY). *Univ. of Wisconsin.*

2:45 **1210.** Isolation of cytochrome c_1 in the form of a soluble lipoprotein. J. JARNEFELT*, H. TISDALE* AND D. E. GREEN. *Univ. of Wisconsin.*

3:00 **1211.** Influence of quinones on electron transport systems from Rhizobia. G. M. CHENIAE AND H. J. EVANS (intr. by G. H. SATTERFIELD). *North Carolina State College.*

3:15 **1212.** Tocopherol as a cofactor of mammalian diphosphopyridine nucleotide-cytochrome c reductase. FRANK VASINGTON*, KENNETH O. DONALDSON* AND ALVIN NASON. *Johns Hopkins Univ.*

3:30 **1213.** Relationship of cytochrome c oxidase activity to the nature of the tissue preparation. LUCILE SMITH AND HELEN CONRAD*. *Univ. of Pennsylvania.*

3:45 **1214.** Copper in cytochrome oxidase. W. W. WAINIO, CHRISTINA VANDER WENDE* N. F. SHIMP*. *Rutgers Univ.*

4:00 **1215.** Adrenal cytochromes. MARY JANE SPIRO AND ERIC G. BALL. *Harvard Med. School.*

4:15 **1216.** Effects of thyroxine and other factors on biogenesis of electron transport enzymes in chick embryos. LUDWIG BRAND* AND H. R. MAHLER. *Indiana Univ.*

Inorganic; Cartilage and Bone

WED. P.M.—CONVENTION HALL, ROOM 300

Chairman: A. E. Sobel

1:30 **1217.** Titration curves of connective tissue colloids in vivo. N. R. JOSEPH, M. B. ENGEL* AND D. M. LASKIN*. *Univ. of Illinois Colleges of Pharmacy and Dentistry.*

1:45 **1218.** Biochemical studies of articular cartilage III: values following immobilization of an extremity. LILLIAN EICHELBERGER AND MICHAEL ROMA*. *Univ. of Chicago.*

2:00 **1219.** Biliary secretion and calcium absorption. F. W. LENGEMANN (intr. by D. B. MORRISON) Univ. of Tennessee.

2:15 **1220.** Estimation of calcium accretion and resorption in the rat. R. H. WASSERMAN*, J. JOWSEY* AND C. L. COMAR. *New York State Veterinary College.*

2:30 **1221.** Citrate of calcified tissues. W. D. ARMSTRONG AND LEON SINGER. *Univ. of Minnesota Med. School.*

2:45 **1222.** Effect of fluoroacetate upon bone citrate. KATHERINE B. HADE*, ANN M. BUDY* AND FRANKLIN C. MCLEAN. *Univ. of Chicago.*

3:00 **1223.** Interrelation of calcium and citrate metabolism. HELEN C. HARRISON AND HAROLD E. HARRISON*. *Johns Hopkins Univ. School of Medicine and Baltimore City Hosp.* (Physiol.)

3:15 **1224.** Metabolism of Sr^{85} and Ca^{45} in man. HERTA SPENCER, JOSEPH SAMACHSON AND DANIEL LASZLO (intr. by EUGENE Y. BERGER). *Montefiore Hosp., New York City.* (Physiol.)

3:30 **1225.** Interaction of radioactive yttrium compounds with serum constituents. BETTY ROSOFF, HIRAM E. HART, GRADY L. WILLIAMS AND RUTH LEWIN (intr. by VALY MENKIN). *Montefiore Hosp., New York City.* (Pathol.)

Erythrocyte Metabolism and Hemoglobin

WED. P.M.—CONVENTION HALL, ROOM 400

Chairman: J. R. Totter

1:30 **1226.** Rat red cell glycolytic intermediates. GRANT R. BARTLETT. *Scripps Clinic.*

1:45 **1227.** A kinetic analysis of cation interactions in the pyruvic phosphoferase system of rabbit erythrocytes. H. B. COLLIER AND T. E. WEBB*. *Univ. of Alberta, Canada.*

2:00 **1228.** Stability of the metabolism of erythrocytes stored in vitro. PAUL A. MARKS, ANNE B. JOHSON*, ROBERT DEBELLIS* AND JULIA BANKS*. *Columbia Univ.*

2:15 **1229.** Nucleotides and phosphate esters in the erythrocyte. BERNARDO S. VANDERHEIDEN*, F. M. HUENNEKENS AND BEVERLY W. GABRIO. *Univ. of Washington School of Medicine and the King County Blood Bank, Seattle.*

2:30 **1230.** Inosine metabolism of fluoride-treated erythrocytes. EDWARD BRESNICK AND WILLIAM C. LEVIN (intr. by D. BAILEY CALVIN). *Univ. of Texas Med. Branch.*

2:45 **1231.** Specificity of red cell sugar transport system. R. S. HILLMAN* AND J. ASHMORE. *Harvard Med. School.*

3:00 **1232.** Biosynthesis of adenosine triphosphate in the rabbit erythrocyte in vivo and in vitro. BERTRAM A. LOWY, BRACHA RAMOT AND IRVING M. LONDON (intr. by JONATHAN WITTENBERG). *Albert Einstein College of Medicine.*

3:15 **1233.** Purification and properties of the glutathione peroxidase of erythrocytes. GORDON C. MILLS (intr. by ANDREW O. ORMSBY). *Univ. of Texas Med. Branch.*

3:30 **1234.** Reactivity of the hemes in methemoglobin-M isolated by starch electrophoresis. PHILIP GEORGE AND P. S. GERALD (intr. by J. H. JONES). *Univ. of Pennsylvania and Children's Med. Ctr., Boston.*

3:45 **1235.** Fractionation of hemoglobin A by means of electrophoresis on ion exchange resin impregnated paper. C. A. J. GOLDBERG (intr. by M. R. EHRENSTEIN). *Univ. of Pennsylvania.*

4:00 **1236.** Adaptation in mammalian hemoglobins. A. RIGGS AND A. TYLER (intr. by WILLIAM SHIVE). *Univ. of Texas.*

Biochemistry-Nutrition Smoker

WEDNESDAY, 9:30 P. M.— SHERATON, GRAND BALLROOM

Exhibits—Inspection Periods

Monday through Thursday: 9 A.M. to 5 P.M.
Friday: 9 A.M. to 1 P.M.

Placement Service

Center Building, Convention Hall

Thursday Morning, April 17, 9:00 a.m.

Amino Acid Metabolism—Tryptophane, Valine, Leucine, Isoleucine

THURS. A.M.—CONVENTION HALL, ROOM D

Chairman: W. E. KNOX

9:00 **1237.** Effect of tryptophan deficiency in the rat on liver tryptophan peroxidase-oxidase (TPO) and urinary 5-hydroxy-3-indoleacetic acid (HIAA). EDITH E. TOWNSEND, J. G. KATIS AND T. L. SOURKES (intr. by O. F. DENSTEDT). *McGill Univ., Canada.*

9:15 **1238.** Mechanism of tryptophan peroxidase-oxidase. TAKEHIKO TANAKA* AND W. EUGENE KNOX. *Harvard Med. School and New England Deaconess Hosp.*

9:30 **1239.** Bacterial metabolism of 5-hydroxytryptamine. EVELYN L. OGINSKY, R. BRADLEY SACK* AND ELIZABETH C. TABBUTT.* *Univ. of Oregon Med. School.*

9:45 **1240.** Metabolism of 3-methoxykynurenine. J. K. ROY*, J. M. PRICE AND R. R. BROWN*. *Univ. of Wisconsin Med. School.*

10:00 **1241.** Metabolism of DL-tryptophan-7a-C^{14} via acetate-1-C^{14}. R. K. GHOLSON* AND L. M. HENDERSON. *Oklahoma State Univ.*

10:15 **1242.** Effect of norepinephrine on rat kidney 5-hydroxytrytophane decarboxylase. JAMES A. BUZARD AND PRISCILLA D. NYTCH (intr. by M. F. PAUL). *Eaton Labs.*

10:30 **1243.** Reversal of the inhibitory activity of L-penicillamine by valine, isoleucine, leucine or methionine. R. M. BLAIR, H. V. APOSHIAN AND M. M. APOSHIAN (intr. by J. R. MURLIN). *Vanderbilt Univ. School of Medicine.*

10:45 **1244.** Reduction of acetolactate in valine biosynthesis. H. EDWIN UMBARGER. *Harvard Med. School.*

11:00 **1245.** α-Acetolactate as a precursor of valine in Saccharomyces cerevisiae. MURRAY STRASSMAN*, KATHARINE F. LEWIS*, MILTON E. CORSEY*, JENNIE B. SHATTON* AND SIDNEY WEINHOUSE. *Lankenau Hosp. Research Inst. and Inst. for Cancer Research.*

11:15 **1246.** Maple sugar urine disease. Roland G. WESTALL, JOSEPH DANCIS, SHELDON MILLER AND MORTIMER LEVITZ (intr. by L. E. HOLT, JR.) *New York Univ. Bellevue Med. Ctr.*

Sex Hormone Metabolism

THURS. A.M.—CONVENTION HALL, ROOM E

Chairman: E. A. DOISY, SR.

9:00 **1247.** Conversion of androgens to estrogens by human placental microsomes. KENNETH J. RYAN (intr. by ROY O. GREEP). *Boston Lying-in Hosp. and Harvard Med. School.* (Physiol.)

9:15 **1248.** Metabolism of 16-ketoestrone in man. BENJAMIN F. STIMMEL. *Rees-Stealy Clinic Research Fndn.*

9:30 **1249.** Biosynthesis of steroids in stallion testis tissue. KENNETH SAVARD, PAIGE K. BESCH*, SALVATORE RESTIVO* AND JOSEPH W. GOLDZIEHER*. *Worcester Fndn. for Exptl. Biology, and Southwest Fndn. for Research and Education.*

9:45 **1250.** Testosterone metabolism in vitro: II. Alterations of metabolites from male and female tissue after exposure to cold. M. E. DENISON AND R. L. JASPER (intr. by H. FEVOLD). *U. S. Army Med. Research Lab., Fort Knox.*

10:00 **1251.** Presence of a second 17-hydroxy (testosterone) dehydrogenase in guinea pig liver and kidney. GERALD L. ENDAHL*, CHARLES D. KOCHAKIAN AND BARBARA R. ENDAHL.* *Univ. of Alabama Med. Ctr.*

10:15 **1252.** Testosterone metabolism in vitro: comparison of metabolites from male and female rats. R. L. JASPER AND M. E. DENISON (intr. by L. L. BOYARSKY). *U. S. Army Med. Research Lab., Fort Knox.* (Physiol.)

10:30 **1253.** Disappearance of testosterone and inhibition of oxygen uptake by testosterone in vitro. R. E. ERICKSON AND M. E. DENISON, (intr. by SHEPPARD M. WALKER). *U. S. Army Med. Research Lab., Fort Knox.* (Physiol.)

10:45 **1254.** Enzymatic properties of a steroid $\Delta^4 - 5\alpha$ hydrogenase. ENRICO FORCHIELLI* AND RALPH I. DORFMAN. *Worcester Fndn. for Exptl. Biology.*

11:00 **1255.** Metabolism of neutral steroids by human tissues. ROBERT A. MEIGS* AND LEWIS L. ENGEL. *Massachusetts Gen. Hosp. and Harvard Med. School.*

11:15 **1256.** Precursors of aldosterone; in vitro studies. RANDALL H. TRAVIS AND GORDON L. FARRELL (intr. by JOSEPHINE B.

GARST). *School of Medicine, Western Reserve Univ.*

11:30 **1257.** Influence of androgens on rat ventral prostate oxidative and synthetic processes in vitro. WELLS E. FARNSWORTH (intr. by WILSON D. LANGLEY). *VA Hosp., Buffalo.*

SYMPOSIUM: Reaction Mechanisms in Enzyme Catalysis

THURS. A.M.—CONVENTION HALL, ROOM 201

Chairman: C. F. Cori

9:00 **1258.** Opening remarks. C. F. CORI. *Washington Univ. School of Medicine.*

9:10 **1259.** Scale models for enzyme-substrate interactions. F. H. WESTHEIMER. *Harvard Univ.*

9:40 **1260.** Approaches to the mechanism of action of double-headed enzymes. E. RACKER. *Public Health Research Inst. of the City of New York.*

10:10 **1261.** Mechanisms of action of phosphoglucomutase and hexokinase. V. A. NAJJAR. *Vanderbilt Univ. School of Medicine.*

10:40 **1262.** Protein structure and enzyme action. D. E. KOSHLAND, JR. *Brookhaven Natl. Lab.*

11:10 **1263.** Stereospecificity of hydrogen transfer in pyridine nucleotide dehydrogenases. B. VENNESLAND. *Univ. of Chicago School of Medicine.*

Physico-Chemical Studies of Proteins I

THURS. A.M.—CONVENTION HALL, ROOM 202

Chairman: J. L. Oncley

9:00 **1264.** Comparative biochemistry of avian egg white proteins. MARVIN B. RHODES*, NELLE S. BENNETT*, PAUL GRIMINGER* AND ROBERT E. FEENEY. *Univ. of Nebraska.*

9:15 **1265.** Mechanism of gelation of proteins with formaldehyde. ELEMER MIHALYI AND JOHN D. GORRY*. *Natl. Heart Inst.*

9:30 **1266.** Bovine muscle proteins. ROBERT J. GIBBS, ALBERT J. FRYAR, CLARENCE LOCKETT AND CLIFTON E. SWIFT (intr. by SAM R. HOOVER). *EURDD, ARS, U. S. Dept. of Agriculture.*

9:45 **1267.** Pentachlorophenol and the ATPase and contractile activities of myosin. EUGENE C. WEINBACH AND WILLIAM J. BOWEN. *Natl. Insts. of Health.*

10:00 **1268.** Demonstration of actin in natural actomyosin (myosin B). J. GERGELY AND A. MARTONOSI*. *Massachusetts Gen. Hosp. and Harvard Med. School.*

10:15 **1269.** New techniques for isolating the subunits of myosin. D. R. KOMINZ (intr. by H. M. DYER). *Natl. Insts. of Health.*

10:30 **1270.** Differential ultraviolet spectra of pepsin. OLGA O. BLUMENFELD (intr. by GERTRUDE E. PERLMANN). *Rockefeller Inst.*

10:45 **1271.** Denaturation of pepsin. SAM YANARI AND F. A. BOVEY (intr. by R. LUMRY). *Minnesota Mining and Mfg. Co.*

11:00 **1272.** Structural studies on papain. J. R. KIMMEL, ALBERT LIGHT*, A. C. M. PAIVA* AND GEORGE KATO*. *Univ. of Utah.*

11:15 **1273.** Total fractionation of calf thymus histone. J. MURRAY LUCK, POUL S. RASMUSSEN* AND KAZUO SATAKE*. *Stanford Univ.*

11:30 **1274.** Thermal denaturation of cattle rhodopsin and opsin. RUTH HUBBARD. *Harvard Univ.*

11:45 **1275.** Phosphate bond of casein. EDWIN B. KALAN AND MARIE TELKA (intr. by W. G. GORDON). *Eastern Regional Research Lab.*

Neurochemistry and Nerve Metabolism

THURS. A.M.—CONVENTION HALL, ROOM 300

Chairman: R. Rossiter

9:00 **1276.** Occlusion and production of γ-aminobutyric acid by cerebral cortex slices. K. A. C. ELLIOTT AND N. M. VAN GELDER*. *McGill Univ., Canada.*

9:15 **1277.** Effect of iproniazid supplemented with various growth factors on brain serotonin and monoamine oxidase levels. JOSEPH BERNSOHN AND IRENE LOZAITYTE (intr. by M. B. WILLIAMSON). *VA Hosp., Hines, Ill., and Northwestern Univ. Med. School.*

9:30 **1278.** A nerve growth-promoting protein. STANLEY COHEN. *Washington Univ.*

9:45 **1279.** Aspartic acid metabolism in the brain. K. BRUCE JACOBSON (intr. by CARL NIEMANN). *California Inst. of Technology.*

10:00 **1280.** Ultramicro method for determination of succinic semialdehyde: properties and distribution of the γ-aminobutyric-α-ketoglutaric transaminase in nervous tissue. R. W. ALBERS AND R. SALVADOR (intr. by W. F. WINDLE). *Natl. Insts. of Health.* (Physiol.)

10:15 **1281.** Chemical energy transfer in schizophrenia. CHARLES FROHMAN, PETER

BECKETT*, GARFIELD TOURNEY* AND J. S. GOTTLIEB*. *Lafayette Clinic.*

10:30 **1282.** Insulin: anti-insulin regulation of glucose metabolism in mouse brain. MARK WOODS, JEBU HUNTER* AND DEAN BURK. *Natl. Cancer Inst.*

10:45 **1283.** Conversion of glucose to sugar components of brain. M. L. KARNOVSKY AND H. MOSER*. *Harvard Med. School.*

11:00 **1284.** Development of resistance of alkylphosphorylated cholinesterase to reactivation by oximes. HARRY O. MICHEL. *U. S. Army Chem. Warfare Labs.*

11:15 **1285.** Cholinesterase activity and muscle response to acetylcholine. JOSEPH H. FLEISHER, JOHN W. HOWARD AND JOSEPH P. CORRIGAN (intr. by BERNARD J. JANDORF). *U. S. A. Chem. Warfare Labs.*

11:30 **1286.** Effect of pH and ionic strength on aqueous extraction of brain proteins and lipoproteins. F. N. LEBARON* AND J. FOLCH. *McLean Hosp., Waverley, Mass., and Harvard Med. School.*

11:45 **1287.** Neuraminic acid in cerebrospinal fluid. SR. MARY WILLIAM, C. S. A.* AND E. ROBOZ. *Georgetown Univ. School of Medicine.*

Carbohydrate Utilization and Transport

THURS. A.M.—CONVENTION HALL, ROOM 400

Chairman: C. R. Park

9:00 **1288.** Activation of glucose oxidation by chloride. NIELS HAUGAARD AND ROBERT R. BLANKEN*. *School of Medicine, Univ. of Pennsylvania.*

9:15 **1289.** Evidence for formation of metaphosphate during the yeast hexokinase reaction. HENRY E. EVERT (intr. by EDWARD MUNTWYLER). *State Univ. of New York College of Medicine.*

9:30 **1290.** Hexose synthesis from malate by a soluble and particulate multienzyme system. J. MENDICINO* AND M. F. UTTER. *Western Reserve Univ.*

9:45 **1291.** Inhibition of glucose utilization by 6-deoxy-6-fluoroglucose in mammalian tissues. G. S. SERIF AND C. J. STEWART (intr. by S. KIRKWOOD). *Scripps Clinic and Research Fndn.*

10:00 **1292.** Blood levels of 2-deoxy-D glucose (2DG) in rats following parenteral injection. HOWARD A. BALL AND CURTIS R. SANDERS*. *Grossmont Hosp. and San Diego Zoological Soc.* (Pathol.)

10:15 **1293.** Galactose: its in vitro oxidation as influenced by steroids. YALE J. TOPPER AND LEROY A. PESCH*. *Natl. Insts. of Health.*

10:30 **1294.** Steady state concentration of glucose in isolated tissue cells. ERNST HELMREICH AND HERMAN N. ELSEN (intr. by R. K. CRANE). *Washington Univ. School of Medicine and Barnard Free Skin and Cancer Hosp.*

10:45 **1295.** Penetration and phosphorylation of 2-deoxyglucose in isolated rat diaphragm. DAVID M. KIPNIS (intr. by CARL F. CORI). *Washington Univ. School of Medicine.*

11:00 **1296.** Carbohydrate metabolism of the fetus in utero. WILLIAM E. HUCKABEE, JAMES METCALFE, HARRY PRYSTOWSKY AND DONALD H. BARRON (intr. by J. S. NICHOLAS). *Boston Univ., Harvard Univ., Johns Hopkins Univ. and Yale Univ.* (Physiol.)

11:15 **1297.** Sugar transport across the muscle cell membrane. H. E. MORGAN* AND C. R. PARK. *Vanderbilt Univ.*

11:30 **1298.** Specificity of sugar transport by the intestine of the hamster. T. HASTINGS WILSON. *Harvard Med. School.*

11:45 **1299.** A possible role of Na^+ in the metabolism of a marine bacterium. ROBERT A. MACLEOD, C. A. CLARIDGE*, AIKO HORI* AND J. F. MURRAY*. *Fisheries Research Board of Canada.*

Thursday Afternoon, April 17, 1:30 p.m.

Purine and Pyrimidine Analogues

THURS. P.M.—CONVENTION HALL, ROOM D

Chairman: G. H. Hitchings

1:30 **1300.** Effects of 8-azaguanine on biosynthesis of Bacillus cereus. H. GEORGE MANDEL AND ROY MARKHAM*. *George Washington Univ. School of Medicine and Molteno Inst., England.*

1:45 **1301.** Metabolism of purines and purine antagonists by drug-resistant strains of Streptococcus faecalis. R. WALLACE BROCKMAN*, DORRIS J. HUTCHISON* AND HOWARD E. SKIPPER. *Southern Research Inst. and Sloan-Kettering Inst.*

2:00 **1302.** Purine metabolism in 6-thioguanine-sensitive and -resistant Ehrlich ascites cells. ALAN C. SARTORELLI* AND G. A. LEPAGE. *Univ. of Wisconsin.*

2:15 **1303.** Effects of metabolites on inhibitory activities of synergistic combinations of antimetabolites. GERTRUDE B. ELION, SAMUEL SINGER* AND GEORGE H. HITCHINGS. *Wellcome Research Labs.*

2:30 **1304.** Inhibition by 6-methylpurine of several functions of adenine. VIRGINIA C. DEWEY, M. R. HEINRICH* AND G. W. KIDDER. *Amherst College.*

2:45 **1305.** Tissue culture studies on mechanisms of action of some purine and thymine analogs. MAIRE T. HAKALA (intr. by C. A. NICHOL). *Roswell Park Mem. Inst.*

3:00 **1306.** Synthesis of 5-methylcytosine deoxyriboside and related pyrimidine nucleosides. JACK J. FOX, DINA VAN PRAAG*, IRIS WEMPEN*, IRIS L. DOERR*, LORETTA CHEONG*, JOSEPH E. KNOLL*, MAXWELL L. EIDINOFF* AND AARON BENDICH. *Sloan-Kettering Inst.*

3:15 **1307.** Potentiation of the action of thymidine analogues by amino acid imbalances. RICHARD E. BELTZ* AND DONALD W. VISSER. *College of Med. Evangelists and School of Medicine, Univ. of Southern California.*

3:30 **1308.** Orotidylic and uridylic acid accumulation in azauracil-inhibited Escherichia coli. R. E. HANDSCHUMACHER (intr. by A. D. WELCH). *Yale Univ. School of Medicine.*

3:45 **1309.** In vitro studies of fluorinated pyrimidines. EBERHARD HARBERS* AND CHARLES HEIDELBERGER. *Univ. of Wisconsin.*

4:00 **1310.** Synthesis of ribosides and deoxyribosides by mouse liver in vitro. WILLIAM H. PRUSOFF AND RAYMOND A. GAITO*. *Yale Univ. School of Medicine.*

4:15 **1311.** Effects of various inhibitors on the pyrimidine metabolism of normal and leukemic leukocytes in vitro. JACOB SHAPIRA* AND RICHARD J. WINZLER. *Univ. of Illinois College of Medicine.*

Carbohydrate Chemistry and Metabolism

THURS. P.M.—CONVENTION HALL, ROOM E

Chairman: D. Stetten, Jr.

1:30 **1312.** Carbohydrate reserves of yeast cells. FRANK W. FALES. *Emory Univ.*

1:45 **1313.** Preparation and molecular weight studies of ascaris muscle glycogen. STANLEY A. ORRELL, JR.* AND ERNEST BUEDING. *Louisiana State Univ. Med. School.*

2:00 **1314.** Determination of inulin in blood and urine by means of vanillin in acid medium. VICTOR E. LEVINE AND WILLIAM W. BECKER*. *Creighton Univ. School of Medicine.*

2:15 **1315.** Spectrophotometric glucose oxidase determination of plasma glucose. A. SAIFER AND S. GERSTENFELD (intr. by S. NATELSON). *Issac Albert Research Inst.*

2:30 **1316.** Organic phosphates and glycerol in blood of the cecropia silkworm. G. R. WYATT, W. L. MEYER* AND RITA KROPF*. *Yale Univ. and Harvard Univ.*

2:45 **1317.** Mutarotase assay with a colorimetric reagent (Keston's glucose reagent) for β glucose. A. S. KESTON. *New York Eye and Ear Infirmary.*

3:00 **1318.** Comparative carbohydrate metabolism in the pseudomonads. IVAN J. STERN*, CAMPBELL M. GILMOUR* AND CHIH H. WANG. *Oregon State College.*

3:15 **1319.** Quantitative histochemistry of human skin. FALLS B. HERSHEY, CHARLES LEWIS, JR. AND C. N. D. CRUICKSHANK (intr. by O. H. LOWRY). *Washington Univ. Med. School, and U. S. VA Hosp.*

3:30 **1320.** Reduction of acetol phosphate by propanediol phosphate dehydrogenase. OTTO Z. SELLINGER* AND O. NEAL MILLER. *Tulane Univ. School of Medicine.*

3:45 **1321.** Oxidation of D-glyceraldehyde by rat liver mitochondria. M. VANKO* AND J. A. MUNTZ. *Albany Med. College.*

4:00 **1322.** Metabolism of myo-inositol-2-C^{14} in the normal rat. LAURENS ANDERSON AND ROBERT H. COOTS*. *Univ. of Wisconsin.*

4:15 **1323.** Sex differences and effects of age, pyridoxine deficiency and hypophysectomy on rat adrenal glycogen. EVANGELINE PAPAGEORGE AND RUTH B. SLENTZ*. *Emory Univ.*

Protein Synthesis: Microsomes, RNA, and Templates

THURS. P.M.—CONVENTION HALL, ROOM 201

Chairman: P. C. Zamecnik

1:30 **1324.** Metabolic studies on rat liver ribonucleoprotein. M. EARL BALIS, KUMUD D. SAMARTH*, MARY L. PETERMANN AND MARY G. HAMILTON*. *Sloan-Kettering Inst.*

1:45 **1325.** Heterogeneity of pancreatic ribonucleoprotein particles. P. SIEKEVITZ AND G. E. PALADE*. *Rockefeller Inst.*

2:00 **1326.** A discontinuous structure for microsomal ribonucleic acid and its relation to protein synthesis. JAY S. ROTH. *Hahnemann Med. College.*

2:15 **1327.** Microsomal precursor of serum albumin. THEODORE PETERS, JR. (intr. by C. V. Z. HAWN). *Mary Imogene Bassett Hosp.* (Pathol.)

2:30 **1328.** Microsomal peptides and amino acids. N. G. ANDERSON AND J. F. ALBRIGHT. *Oak Ridge Natl. Lab.* (Physiol.)

2:45 **1329.** Reaction of phosphorylated RNA with amino acids. A. L. DOUNCE, A. O. HAWTREY*, B. GUTSCHE* AND G. M. RICHARDS*. *Univ. of Rochester School of Medicine.*

3:00 **1330.** Kinetics of nucleic acid turnovers during enzyme induction in the rat. PHILIP FEIGELSON, MURIEL FEIGELSON* AND CYNTHIA FANCHER*. *Columbia Univ.*

3:15 **1331.** Nucleic acid metabolism and induced enzyme formation in rat liver. NORMAN D. LEE. *VA Med. Teaching Group Hosp. and Univ. of Tennessee Med. School.*

3:30 **1332.** Interruption of the pathway of hemoglobin synthesis by a valine analogue. M. RABINOVITZ AND H. MCGRATH*. *Univ. of California School of Medicine.*

3:45 **1333.** Some properties of an unstable E. coli ribonucleic acid. JACK HOROWITZ*, ANNA LOMBARD* AND ERWIN CHARGAFF. *Columbia Univ.*

4:00 **1334.** Turnover of P^{32} in RNA and "protein" during amino acid deprivation in an auxotroph of E. coli. AVRAM GOLDSTEIN, DORA B. GOLDSTEIN* AND BEVERLY J. BROWN*. *Stanford Univ.* (Pharmacol.)

4:15 **1335.** Synthesis of ornithine transcarbamylase in protoplasts of E. coli. PALMER ROGERS, JR. (intr. by S. F. CARSON). *Oak Ridge Natl. Lab.*

Oxidative Phosphorylation

THURS. P.M.—CONVENTION HALL, ROOM 202

Chairman: B. Chance

1:30 **1336.** Possible relationship of soluble reductase and oxidase proteins derived from mitochondria to oxidative phosphorylation. EARL JACOBS (intr. by GORDON ALDERTON). *Univ. of California School of Medicine.*

1:45 **1337.** Stimulation of oxidative phosphorylation by coenzyme A. WILLIAM C. MCMURRAY* AND HENRY A. LARDY. *Univ. of Wisconsin.*

2:00 **1338.** Coupled phosphorylation in an electron transport particle. A. W. LINNANE AND D. M. ZIEGLER (intr. by H. BEINERT). *Univ. of Wisconsin.*

2:15 **1339.** Vitamin K_1 and oxidative phosphorylation. R. DUNCAN DALLAM AND W. W. ANDERSON (intr. by JOHN FULLER TAYLOR). *Univ. of Louisville School of Medicine.*

2:30 **1340.** Restoration of oxidative phosphorylation by vitamin K_1. ROBERT E. BEYER (intr. by DAVID RAPPORT). *Tufts Univ. School of Medicine.* (Physiol.)

2:45 **1341.** Coenzymatic function of vitamin K in oxidative phosphorylation. ARNOLD F. BRODIE. *Harvard Med. School.*

3:00 **1342.** Oxidative phosphorylation and stability of liver mitochondria from rats exposed to low environmental temperatures. SYLVIA PANAGOS AND ROBERT E. BEYER (intr. by ATTILIO CANZANELLI). *Tufts Univ. School of Medicine.* (Physiol.)

3:15 **1343.** Action of thyroxin on oxidative phosphorylation in vitro. J. RAMSEY BRONK (intr. by W. WAYNE KIELLEY). *Natl. Heart Inst.*

3:30 **1344.** Rebinding of DPN to mitochondrial enzymes. F. EDMUND HUNTER, JR., BEVERLY SHUTZ*, ROBERT MALISON* AND ALICE ATCHISON*. *Washington Univ.*

3:45 **1345.** Intramitochondrial pyridine nucleotide. BRITTON CHANCE AND HELEN CONRAD*. *Univ. of Pennsylvania.*

4:00 **1346.** Stoichiometric relations between ATP formation and reduced pyridine nucleotide content in mitochondria. RUDOLF H.

EISENHARDT AND LISELOTTE SCHACHINGER (intr. by E. STAPLE). *Univ. of Pennsylvania.*

Plant Biochemistry

THURS. P.M.—CONVENTION HALL, ROOM 300

Chairman: E. E. Conn

1:30 **1347.** Biosynthesis of the ergot alkaloids. R. J. SUHADOLNIK, J. B. HANSON AND Y. H. LOO (intr. by W. D. GALLUP). *Univ. of Illinois and Eli Lilly Research Labs.*

1:45 **1348.** Formation of L-ascorbic acid in plants. FRANK A. LOEWUS AND ROSIE JANG.* *Western Regional Research Lab.*

2:00 **1349.** In vivo biosynthesis of glycosidic cyanide in sorghum. J. E. GANDER (intr. by W. F. GEDDES). *Montana State College and Univ. of Minnesota.*

2:15 **1350.** Biosynthesis of p-hydroxybenzaldehyde. ERIC E. CONN AND T. AKAZAWA*. *Univ. of California.*

2:30 **1351.** Nucleotide-degrading systems in cabbage leaf. MENDEL MAZELIS (intr. by J. C. LEWIS). *Western Regional Research Lab.*

2:45 **1352.** Effect of choline and its analogues on phosphorus metabolism in plants. N. E. TOLBERT AND JAKOB LOEWENBERG*. *Oak Ridge Natl. Lab.*

3:00 **1353.** Inhibition of plant growth by isonicotinic acid hydrazide. GEORGE D. LUDWIG (intr. by COLIN MACLEOD.) *Dept. of Medicine and Johnson Foundation, Univ. of Pennsylvania.* (Immunol.)

3:15 **1354.** Comparison of carbohydrate oxidation in various races of the wheat smut fungus, Tilletia caries. R. W. NEWBURGH AND VERNON H. CHELDELIN. *Oregon State College.*

3:30 **1355.** Isolation of a saponin from peanut hearts. JULIUS W. DIECKERT (intr. by A. M. ALTSCHUL). *USDA, SURDD, New Orleans.*

3:45 **1356.** Chemistry of West Indian mahogany wood and termite repellent activity. C. F. ASENJO, L. AMOROS-MARIN* AND WANDA TORRES*. *School of Medicine, Univ. of Puerto Rico.*

Pituitary Hormones

THURS. P.M.—CONVENTION HALL, ROOM 400

Chairman: C. H. Li

1:30 **1357.** Extraction of thyrotrophin from pituitary glands and blood by a percolation method. ROBERT W. BATES. *Natl. Insts. of Health.*

1:45 **1358.** Thyrotrophin in pituitary tumors in mice. P. G. CONDLIFFE, R. W. BATES AND G. M. TOMKINS. *Natl. Insts. of Health.*

2:00 **1359.** Effect of thyrotropic hormone on the in vitro uptake of radioiodide. K. T. HART AND D. DRUET (intr. by C. H. NEILSON). *VA Hosp., St. Louis.*

2:15 **1360.** Changes in liver picolinic carboxylase effected by cortisone, insulin and pituitary hormones. ALAN H. MEHLER AND ERNEST G. MCDANIEL*. *Natl. Insts. of Health.*

2:30 **1361.** Potentiation of ACTH by squalene. IRENE T. KLINE (intr. by D. H. BASINSKI). *Edsel Ford Inst. for Med. Research.*

2:45 **1362.** Effect of growth hormone, androgen and corticotrophin on bone protein. HARRY E. BANGHART, YU SHENG LOUISE FENG AND ARTHUR W. WASE (intr. by M. JOHN BOYD). *Hahnemann Med. College.*

3:00 **1363.** Endocrine factors involved in nitrogen storage. O. H. GAEBLER, RACHEL GLOVINSKY*, DOROTHY KURRIE* AND HELEN LEES*. *Edsel B. Ford Inst. for Med. Research.*

Vitamin Function and Metabolism

THURS. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: P. György

1:30 **1364.** Function of vitamin A. RUSSELL A. VAN DYKE* AND GEORGE WOLF. *Univ. of Illinois.*

1:45 **1365.** Vitamin D inhibition of citrate oxidation in kidney mitochondria. H. F. DE LUCA*, S. REISER* AND H. STEENBOCK. *Univ. of Wisconsin.*

2:00 **1366.** Blood folic acid system. GERRIT TOENNIES, PHOEBE PHILLIPS* AND EARL USDIN*. *Inst. for Cancer Research and Lankenau Hosp. Research Inst.*

2:15 **1367.** Distribution of carboxyl-C^{14}-biotin in the chick. S. P. MISTRY AND F. LEUTHARDT (intr. by T. S. HAMILTON). *Physiologisch-chemisches Institut der Universitat, Switzerland.*

2:30 **1368.** Phosphopantothenic acid, an intermediate in coenzyme A synthesis in Proteus morganii. GENE M. BROWN (intr. by J. M. BUCHANAN). *Massachusetts Inst. of Technology.*

2:45 **1369.** Niacin-niacinamide relationship in carbohydrate metabolism. C. FUNK, P. TOMASHEFSKY AND T. T. IRIYE*. *Funk Fndn.*

3:00 **1370.** Blood urea levels of pyridoxine

deficient mice. JOHN B. LYON, JR. AND EUGENE A. ARNOLD (intr. by P. F. FENTON). *Emory Univ.* (Physiol.)

3:15 **1371.** Metabolic activity of a green-fluorescent compound isolated from Ashbya gossypii. GLADYS F. MALEY* AND G. W. E. PLAUT. *New York Univ. College of Medicine.*

3:30 **1372.** Riboflavin biosynthesis. USAMA AL-KHALIDI (intr. by G. ROBERT GREENBERG). *Univ. of Michigan.*

3:45 **1373.** Inositol metabolism by kidney and plant preparations. KEITH E. RICHARDSON* AND BERNARD AXELROD. *Purdue Univ.*

4:00 **1374.** Adrenal ascorbic acid in galactoflavin fed rats. GRANT G. SLATER (intr. by SIDNEY ROBERTS). *School of Medicine, Univ. of California Med. Ctr.*

Biochemistry Society Business Meeting

THURSDAY, 4:30 P.M.—CONVENTION HALL, ROOM 201

Registration Desks

Convention Hall, Monday–Friday (8 A.M.–5 P.M.)
Headquarters Hotels, Sunday (9 A.M.–9 P.M.); Monday (5–9 P.M.)

Lost and Found

Federation Office, Room 305, Convention Hall

Friday Morning, April 18, 9:00 a.m.

Hormone Effects

FRI. A.M.—CONVENTION HALL, ROOM D

Chairman: N. Haugaard

9:00 **1375.** Partial purification of bovine parathyroid extract. SAMUEL FRIEDMAN* AND PAUL L. MUNSON. *School of Dental Medicine and Med. School, Harvard Univ.*

9:15 **1376.** Mechanism of action of parathyroid hormone. HILLIARD E. FIRSCHEIN* GEORGE R. MARTIN*, B. J. MULRYAN* AND WILLIAM F. NEUMAN. *Univ. of Rochester.*

9:30 **1377.** Metabolism of I^{131}-labeled acetic and propionic acid derivatives of thyroxine and triiodothyronine. EUNICE V. FLOCK, JESSE L. BOLLMAN* AND JOHN H. GRINDLAY*. *Mayo Clinic and Fndn.*

9:45 **1378.** Effect of thyroxin on enzymatic steroid reduction. JOSEPH S. MCGUIRE (intr. by JOHN KERESZTESY). *Natl. Inst. of Arthritis and Metabolic Diseases.*

10:00 **1379.** In vivo stimulation of acyl phosphatase by thyroxin. ISAAC HARARY (intr. by I. ZABIN). VA Hosp., *Long Beach, and Univ. of California.*

10:15 **1380.** Effect of thyroxine analogues on aerobic glycolysis and oxygen consumption of ascites tumor cells. R. CEREIJO-SANTALO*, R. DI NELLA*, C. R. PARK, J. H. PARK AND R. PITT-RIVERS, *Vanderbilt Univ.* and *Natl. Inst. for Med. Research, England.*

10:30 **1381.** Anti-thyroid activity of certain rhodanine congeners. ROBERT P. MARTIN AND F. X. GASSNER (intr. by F. A. CAJORI). *Colorado State Univ.*

10:45 **1382.** Antithyroid action of 3-amino-1,2-4 triazole. NICHOLAS M. ALEXANDER (intr. by DONALD L. BUCHANAN). *VA Hosp. and Yale Univ.*

11:00 **1383.** Stimulation of isocitric dehydrogenase-DPN by substituted estrogens. VINCENT HOLLANDER, HAZEL M. NOLAN AND NINA HOLLANDER (intr. by R. W. MCGILVERY). *Univ. of Virginia Hosp.*

11:15 **1384.** Effect of steroid hormones on rat liver pyruvic oxidase. L. EDGAR LEE (intr. by CARL G. BAKER). *Natl Inst. of Arthritis and Metabolic Diseases.*

11:30 **1385.** Gluconeogenesis: effect of hydrocortisone or high protein diets on glutamic-pyruvic transaminase. F. ROSEN, N. R. ROBERTS* AND C. A. NICHOL. *Roswell Park Mem. Inst.* (Nutr.)

11:45 **1386.** Hormonal influences on the metabolism of C^{14}-labeled acetate in man. ALLEN R. HENNES* AND WALTON W. SHREEVE. *Brookhaven Natl. Lab.*

Peptide and Amino Acid Chemistry

FRI. A.M.—CONVENTION HALL, ROOM E

Chairman: H. T. Clarke

9:00 **1387.** Isolation of DNP-peptides from DNP-polypeptidyl-proteins. JOHN H. HASH*, REMEDIOS G. ONA* AND ROBERT R. BECKER. *Columbia Univ.*

9:15 **1388.** N-acetylpeptide from cucumber virus-4 protein. KOZO NARITA (intr. by H. FRAENKEL-CONRAT). *Univ. of California.*

9:30 **1389.** Isolation of two peptides from a collagenase digest of collagen. RALPH E. SCHROHENLOHER* AND MILAN A. LOGAN. *Univ. of Cincinnati College of Medicine.*

9:45 **1390.** Isolation of a new peptide with streptogenin activity. GEORGE L. TRITSCH* AND D. W. WOOLLEY. *Rockefeller Inst.*

10:00 **1391.** Purification and structure studies of peptides released from fibrinogen by thrombin. JULES A. GLADNER, J. E. FOLK AND K. LAKI (intr. by H. EDELHOCH). *Natl. Insts. of Health.*

10:15 **1392.** Linkage between 6-methyloctanoic acid and the cyclopeptide in circulin A. J. E. GRADY, HENRY KOFFLER, J. L. PARSONS, TOSHIO KOBAYASHI AND P. A. TETRAULT (intr. by J. F. FOSTER). *Purdue Univ.*

10:30 **1393.** Variations in net synthesis of reduced glutathione in the embryos of two breeds of chickens. H. O. KUNKEL AND ENSEL C. STUTTS*. *Texas Agric. Expt. Station.*

10:45 **1394.** Cysteine in non-protein moiety of muscle phosphorylase. MARY V. BUELL AND RAYMOND E. HANSEN.* *Univ. of Chicago.*

11:00 **1395.** Catalytic polarographic waves of sulfur-free amino acids. OTTO H. MULLER AND ITSURO YAMANOUCHI*. *State Univ. of New York College of Medicine.* (Physiol.)

11:15 **1396.** Homocysteine-thiolactone interrelationships and reaction with formaldehyde. T. F. LAVINE, N. F. FLOYD AND MARY

S. CAMMAROTI*. *Inst. for Cancer Research and Lankenau Hosp. Research Inst.*

11:30 **1397.** Kinetic and equilibrium studies of the reactivity of imidazole. WALTER L. KOLTUN* AND FRANK R. N. GURD. *Cornell Univ. Med. College and Equitable Life Assurance Soc.*

11:45 **1398.** Related compounds in Shaw adrenaline test. FRITZ BISCHOFF AND ABOLFATH KHAN BAKHTIAR.* *Santa Barbara Cottage Hosp.*

Protein Synthesis and Metabolism

FRI. A.M.—CONVENTION HALL, ROOM 201

Chairman: F. Haurowitz

9:00 **1399.** Enzyme-substrate relationship in amine incorporating system. M. J. MYCEK*, D. D. CLARKE*, A. NEIDLE* AND H. WAELSCH. *New York State Psychiatric Inst.*

9:15 **1400.** Incorporation of p-fluorophenylalanine into crystalline proteins. M. VAUGHAN AND D. STEINBERG. *Natl. Heart Inst.*

9:30 **1401.** Incorporation of valine-1-C^{14} into cytochrome c by rat liver mitochondria. MELVIN V. SIMPSON, HAROLD M. BATES* AND VALDA M. CRADDOCK*. *Yale Univ.*

9:45 **1402.** Direct action of ascorbic acid in collagen biosynthesis. BERNARD S. GOULD. *Massachusetts Inst. of Technology.*

10:00 **1403.** The in vivo synthesis and turnover of collagen. NANCY L. NOBLE, J. FREDERICK WOESSNER, JR., KUNG-YING TANG KAO AND ROBERT J. BOUCEK (intr. by G. T. LEWIS). *Howard Hughes Med. Inst.*

10:15 **1404.** Amino acid turnover in "nonprotein" fractions of hen oviduct in relation to incorporation into proteins. RICHARD W. HENDLER. *Natl. Heart Inst.*

10:30 **1405.** Measurement of the turnover of albumin. H. TARVER AND S. MARGEN*. *Univ. of California*

10:45 **1406.** The fate of double labeled homologous serum proteins in rats. SIDNEY FLEISCHER*, FELIX HAUROWITZ, HARRY WALTER* AND ARTHUR LIETZE*. *Indiana Univ.*

11:00 **1407.** "Turnover rates" of serum proteins in growing rats. HENRY JEFFAY (intr. by S. BINKLEY). *Univ. of Illinois College of Medicine.*

11:15 **1408.** Incorporation of glycine-2-C^{14} into proteins and nucleic acid of rat thymus lymphoid tissue. MELVIN BLECHER (intr. by A. WHITE). *Albert Einstein College of Medicine.*

11:30 **1409.** Amino acid incorporation into muscle and liver proteins of mice with hereditary muscular dystrophy. ERIC J. SIMON, IRMA LESSELL*, CHARLOTTE GROSS* AND ADE T. MILHORAT*. *Cornell Univ. Med. College.*

11:45 **1410.** Sites of catabolism for plasma proteins. WALTER L. HUGHES, JAMES R. KLINENBERG* AND DAVID GITLIN.* *Brookhaven Natl. Lab. and Harvard Med. School.*

Biological Oxidation

FRI. A.M.—CONVENTION HALL, ROOM 202

Chairman: T. P. Singer

9:00 **1411.** Luminescence-respiration-coupled spectral and scattering changes in luminous bacteria. B. L. STREHLER. *Natl. Heart Inst. and Baltimore City Hosps.*

9:15 **1412.** Interrelations between endogenous and exogenous oxidations in growing cells. PIERRE H. GONSE (intr. by EDMOND H. FISCHER). *Univ. of Washington.*

9:30 **1413.** Hydrogen oxidation by Clostridium kluyverii. STEPHEN C. KINSKY (intr. by E. R. STADTMAN). *Natl. Heart Inst.*

9:45 **1414.** Lactate metabolizing enzyme systems of Mycobacterium phlei. W. B. SUTTON. *Eli Lilly and Co.*

10:00 **1415.** Activation of pyridine nucleotide transhydrogenation by steroid hormones. P. TALALAY, H. G. WILLIAMS-ASHMAN AND B. HURLOCK*. *Ben May Lab. for Cancer Research and Univ. of Chicago.*

10:15 **1416.** Properties of 3-substituted pyridine analogs of DPN. BRUCE M. ANDERSON (intr. by MARTIN D. KAMEN). *Brandeis Univ. and Johns Hopkins Univ.*

10:30 **1417.** Pathways of electron transport in Lactobacilli. CORNELIUS F. STRITTMATTER. *Harvard Med. School.*

10:45 **1418.** Alpha-glycerophosphate oxidase of flight muscle mitochondria. BERTRAM SACKTOR AND RONALD ESTABROOK*. *Army Chem. Ctr. and Univ. of Pennsylvania.*

11:00 **1419.** "Cytochrome-reducing" α-glycerophosphate dehydrogenase. ROBERT L. RINGLER* AND THOMAS P. SINGER. *Edsel B. Ford Inst.*

11:15 **1420.** Rat liver glyoxylic acid oxidase system. H. I. NAKADA AND LORRAINE P. SUND*. *Scripps Clinic and Research Fndn.*

11:30 **1421.** Purification and properties of cytrochrome c_4 and c_5 from Azotobacter vinelandii. NORBERT P. NEUMANN* AND ROBERT H. BURRIS. *Univ. of Wisconsin.*

Inorganic Metabolism

FRI. A.M.—CONVENTION HALL, ROOM 300

Chairman: A. H. Smith

9:00 **1422.** Zinc metabolism in fish livers. PAUL D. SALTMAN AND HOWARD BOROUGHS*. *Univ. of Southern California, and AEC Project, Univ. of Hawaii.*

9:15 **1423.** Biliary excretion of manganese. A. J. BERTINCHAMPS* AND G. C. COTZIAS. *Brookhaven Natl. Lab.* (Pathol.)

9:30 **1424.** Isolation of mixed disulfide containing selenium. KENNETH P. MCCONNELL. *VA Hosp. and Univ. of Louisville Med. School.*

10:00 **1425.** Evaluation of the iron pool with a new iron chelate. SAMUEL KORMAN AND DANIEL LASZLO (intr. by BERNARD F. ERLANGER). *Montefiore Hospital, New York City.*

10:15 **1426.** Release of storage iron to the plasma by xanthine oxidase after purine administration. SAUL GREEN*, ANIL K. SAHA*, ANNE W. CARLETON* AND ABRAHAM MAZUR. *Cornell Univ. Med. College.*

10:30 **1427.** Chemical studies on hemosiderin. ROBERT H. MCKAY JR. AND RICHARD A. FINEBERG (intr. by MORTON ROTHSTEIN). *Univ. of California School of Medicine.*

Microorganisms I

FRI. A.M.—CONVENTION HALL, ROOM 400

Chairman: I. C. Gunsalus

9:00 **1428.** Control of sporulation in Physarum polycephalum. JOHN W. DANIEL, JR.* AND H. P. RUSCH. *Univ. of Wisconsin.* (Pathol.)

9:15 **1429.** Biochemical studies of differentiation in Aspergillus niger. FRANCIS J. BEHAL* AND ROBERT E. EAKIN. *Clayton Fndn. for Research and Univ. of Texas.*

9:30 **1430.** Occurrence and properties of nucleic acid-amine complexes. DONALD L. KEISTER (intr. by GUILFORD G. RUDOLPH). *School of Medicine, Univ. of Maryland* (Physiol.)

9:45 **1431.** Inhibition of nucleic acid degradation in bacteria by spermine. B. P. DOCTOR AND EDWARD J. HERBST (intr. by E. G. SCHMIDT). *School of Medicine, Univ. of Maryland.*

10:00 **1432.** Inhibition of E. coli exposed to synthetic air pollutants. JOSEPH H. GAST AND CHAO HAN PAN (intr. by JORGE AWAPARA). *Baylor Univ. College of Medicine.*

10:15 **1433.** Reversible metabolic swelling of bacterial protoplasts and its dependence on K^+. ADOLPH ABRAMS. *Univ. of Colorado School of Medicine.*

10:30 **1434.** Fixation of N_2 by extracts from Clostridium pasteurianum. G. E. HOCH AND D. W. S. WESTLAKE (intr. by FOLKE SKOOG). *Univ. of Wisconsin.*

10:45 **1435.** Nitrogen fixation in a mutant of Azotobacter vinelandii. F. E. MUMFORD J. E. CARNAHAN AND J. E. CASTLE (intr. by T. R. WOOD). *E. I. du Pont de Nemours.*

11:00 **1436.** CO_2 fixing reactions in extracts of Propionibacterium shermanii. SEYMOUR H. POMERANTZ (intr. by H. GEST). *Western Reserve Univ.*

11:15 **1437.** Pathways of carbohydrate metabolism in Entamoeba histolytica. DORIS M. HILKER* AND ALAN G. C. WHITE. *Tulane Univ.*

Viruses and Genetics

FRI. A.M.—MUSEUM AUDITORIUM

Chairman: S. S. Cohen

9:00 **1438.** Effect of tobacco mosaic virus infection on host nucleic acids. TUNG-YUI WANG AND BARRY COMMONER. *Washington Univ.*

9:15 **1439.** Differential labeling of 5′-nucleotides in the synthesis of virus nucleic acid. MATTHYS STAEHELIN (intr. by W. M. STANLEY). *Univ. of California.*

9:30 **1440.** Incorporation of bicarbonate, glycine and formate in plants. JOSEPHINE S. SALSER, PHILIP NEWMARK AND GEORGE E. SALSER (intr. by C. A. MILLS). *Univ. of Kansas.*

9:45 **1441.** Biological activity of partially degraded TMV. BARRY COMMONER. *Washington Univ.*

10:00 **1442.** Infectivity of ribonucleic acid from poliovirus on cell monolayers. GEBHARD KOCH, HATTIE E. ALEXANDER, ISABEL MORGAN MOUNTAIN, KATHERINE SPRUNT AND OLGA VAN DAMME (intr. by STEPHEN ZAMENHOF). *Babies Hosp. (Presbyterian Hosp. and Columbia Univ.*

10:15 **1443.** RNA turnover and DNA synthesis in bacteriophage-infected bacteria. L. ASTRACHAN (intr. by M. I. DOLIN). *Oak Ridge Natl. Lab.*

10:30 **1444.** The deoxycytidylate hydroxymethylase of virus-infected E. coli. JOEL G. FLAKS* AND SEYMOUR S. COHEN. *Univ. of Pennsylvania School of Medicine.*

10:45 **1445.** A contracile protein in the tail of bacteriophage T2. LLOYD M. KOZLOFF. *Univ. of Chicago.*

11:00 **1446.** Putrescine, spermidine and spermine in bacterial viruses. BRUCE N. AMES, DONALD T. DUBIN* AND SANFORD M. ROSENTHAL. *Natl. Insts. of Health.*

11:15 **1447.** Inheritance of nucleic acid markers in crosses of paired T phages. MARGERIS A. JESAITIS. *Rockefeller Inst.*

11:30 **1448.** A biological test for ultraviolet damage and photoreversal in non-transforming DNA. CLAUD S. RUPERT (intr. by R. M. HERRIOTT). *Johns Hopkins School of Hygiene and Public Health.*

11:45 **1449.** Purification of a genetically-alterable component of T2 bacteriophage. W. J. DREYER*, A. KATZ* AND C. B. ANFINSEN. *Natl. Heart Inst.*

Visible Index and Message Center

Consult the visible index of registrants to locate your friends—Convention Hall, off the Main Lobby

Federation Office

Room 305, Convention Hall
Rooms 216–217, Bellevue-Stratford Hotel

Friday Afternoon, April 18, 1:30 p.m.

Physico-Chemical Studies of Proteins II

FRI. P.M.—CONVENTION HALL, ROOM D

Chairman: C. A. Zittle

1:30 **1450.** Organic acids affecting electrophoretic homogeneity of human serum albumin at pH 4.0. K. SCHMID. *Harvard Med. School and Massachusetts Gen. Hosp.*

1:45 **1451.** Beryllium binding of bovine serum albumin. SIDNEY BELMAN (intr. by NORTON NELSON). *New York Univ.*

2:00 **1452.** The carbohydrate component of orosomucoid. EDWIN A. POPENOE. *Brookhaven Natl. Lab.*

2:15 **1453.** Molecular size of G-globulin by scatter of light. ELLA H. FISHBERG. *Beth Israel Hosp., New York City.*

2:30 **1454.** Chromatography of serum containing abnormal amounts of gamma globulin. JOHN L. FAHEY, PATRICIA F. McCOY* AND ANN P. HORBETT*. *Natl. Cancer Inst.* (Physiol.)

2:45 **1455.** Physico-chemical investigation in salt solution of a urinary mucoprotein with virus inhibiting activity. MYLES MAXFIELD. *Brookhaven Natl. Lab.* (Physiol.)

3:00 **1456.** Behavior of lysozyme in acid. SHERMAN BEYCHOK (intr. by J. STEINHARDT). *New York Univ. Med. School.*

3:15 **1457.** Mixed disulfide content of partially reduced ribonuclease. F. H. WHITE, JR. (intr. by M. E. MAVER). *Natl. Heart Inst.*

3:30 **1458.** Properdin. Preparation from fraction I. DANIEL S. SPICER, LOIS I. PRIESTER, EDWARD V. C. SMITH, AND BENJAMIN E. SANDERS (intr. by JESSE W. HUFF). *Merck Sharp and Dohme Research Labs.*

3:45 **1459.** Crystallization of tetrahydrofolic formylase. JESSE C. RABINOWITZ AND W. E. PRICER, JR.* *Univ. of California and Natl. Insts. of Health.*

Insulin, Glucagon and Diabetes

FRI. P.M.—CONVENTION HALL, ROOM E

Chairman: S. Weinhouse

1:30 **1460.** Binding mechanism for insulin in "insulin-resistant" sera. G. M. GRODSKY AND P. H. FORSHAM (intr. by HAROLD A. HARPER). *Univ. of California School of Medicine.*

1:45 **1461.** Organ perfusion studies with insulin-I^{131}. GLENN E. MORTIMORE*, FRANK TIETZE* AND DEWITT STETTEN, JR. *Natl. Inst. of Arthritis and Metabolic Diseases.*

2:00 **1462.** Effect of bicarbonate upon the response to insulin of glycolytic systems in normal rat diaphragm. W. N. SHAW* AND W. C. STADIE. *Univ. of Pennsylvania.*

2:15 **1463.** Bioassay of insulin using mouse hemidiaphragms. JIRO CYAMA* AND R. LORIMER GRANT. *Food and Drug Admin.*

2:30 **1464.** Effect of insulin upon rate of glycogenesis after glucose administration in rats. JOSEPH H. ROE, MARY LOU SEARS* AND ARNOLD L. CASE*. *George Washington Univ.*

2:45 **1465.** Use of mouse melanoma-S91 for definitive determination of the primary site of insulin action at mitochondrial hexokinase. DEAN BURK AND MARK WOODS. *Natl. Cancer Inst.*

3:00 **1466.** Effect of insulin and alloxan on tryptophan peroxidase induction in rat liver. JOSEPH M. SCHOR*, WAYNE WESTMARK* AND EARL FRIEDEN. *Florida State Univ.*

3:15 **1467.** Influence of insulin and orinase on the turnover of plasma glucose as studied with C^{14} glucose in humans. G. L. SEARLE, G. E. MORTIMORE, R. BUCKLEY AND W. A. REILLY (intr. by SAMUEL ABRAHAM). *VA Hosp., San Francisco.*

3:30 **1468.** Effect of glucagon on hepatic blood flow and metabolism in the unanesthetized dog. W. C. SHOEMAKER* AND T. B. VAN ITALLIE. *Harvard Univ.* (Nutr.).

3:45 **1469.** Phenethyldiguanide. ARNE N. WICK AND ELLEN LARSON*. *Scripps Clinic and Research Fndn.*

4:00 **1470.** Mechanism of diabetes mellitus. S. P. BESSMAN, N. BACHUR* E. C. LAYNE* AND J. FITZGERALD*. *Univ. of Maryland Med. School.*

4:15 **1471.** Maternal and fetal liver metabolism in diabetic pregnant rats. DWAIN D. HAGERMAN AND FREDERICA M. WELLINGTON (intr. by F. LEE RODKEY). *Harvard Med. School.*

Proteolytic Enzymes II

FRI. P.M.—CONVENTION HALL, ROOM F

Chairman: C. Toennies

1:30 **1472.** Leucine aminopeptidase from an ascites tumor. ELIZABETH K. PATTERSON.

Inst. of Cancer Research and the Lankenau Hosp. Research Inst.

1:45 **1473.** Specificity of protaminase. LEOPOLD WEIL AND THOMAS S. SEIBLES*. *Eastern Regional Research Lab.*

2:00 **1474.** Some ion effects on the activity of rat liver insulinase. NEIL C. DAVIS, ROBERT JINKS* AND I. ARTHUR MIRSKY. *Univ. of Pittsburgh School of Medicine.*

2:15 **1475.** Structural requirements for papain activity. ROBERT L. HILL*, GEORGE S. SHIELDS*, HERBERT C. SCHWARTZ* AND EMIL L. SMITH. *Univ. of Utah.*

2:30 **1476.** Proteolytic activity of skeletal muscle. THOMAS R. KOSZALKA* AND LEON L. MILLER. *Univ. of Rochester School of Medicine.*

2:45 **1477.** Proteolytic specificity of pancreatic elastase. SHIN YEH YU, GERTRUDE H. BLUMENTHAL AND HERMAN T. BLUMENTHAL (intr. by M. SOMOGYI). *Jewish Hosp., St. Louis.*

3:00 **1478.** Action of Cl. histolyticum exoenzymes on collagen and gelatin. JAMES D. OGLE (intr. by GEORGE M. GUEST). *Univ. of Cincinnati College of Medicine.*

3:15 **1479.** Extra-intestinal digestion of protein by larvae of the blowfly, Phormia regina. VICTOR JACK BROOKES (intr. by T. E. KING). *Oregon State College.*

3:30 **1480.** Protease produced by pseudomonas aeruginosa. EARL FISHER, JR. (intr. by MORRIS F. SHAFFER). *Tulane Univ. School of Medicine.* (Immunol.)

Amino Acid and Protein Metabolism

FRI. P.M.—CONVENTION HALL, ROOM 201

Chairman: D. D. Van Slyke

1:30 **1481.** Urea cycle enzymes in bullfrog larvae. G. W. BROWN, JR.* AND P. P. COHEN. *Univ. of Wisconsin.*

1:45 **1482.** Kinetics of ammonia metabolism in vivo. GEORGE D. DUDA AND PHILIP HANDLER. *Duke Univ. School of Medicine.*

2:00 **1483.** Effects of vitamin B_6 deficiency on the amino acid metabolism of Hela cells. JAMES E. DARNELL* AND LEON LEVINTOW. *Natl. Inst. of Allergy and Infectious Diseases.*

2:15 **1484.** Arginine transport and arginase activity in Ehrlich ascites carcinoma cells. R. M. JOHNSTONE (intr. by E. H. VENNING). *McGill-Montreal Gen. Hosp. Research Inst.*

2:30 **1485.** Interrelationships in amino acid and metal transport. P. R. PAL (intr. by H. N. CHRISTENSEN). *Univ. of Michigan.*

2:45 **1486.** Starvation effects on amino acid catabolic enzymes in rat liver. H. C. PITOT, J. H. DENT AND T. FEARY (intr. by E. FARBER). *Tulane Univ. School of Medicine.*

3:00 **1487.** Amino acid channeling in experimental nephrosis. DAVID L. DRABKIN, JULIAN B. MARSH AND GEORGE A. BRAUN*. *Univ. of Pennsylvania.*

3:15 **1488.** Proteolytic enzyme supplements and protein utilization in man. ANTHONY A. ALBANESE, R. A. HIGGONS*, L. A. ORTO* AND D. N. ZAYATTARO*. *St. Luke's Hospital, New York City.*

3:30 **1489.** Effect of caloric and protein intake on glycine-N^{15} turnover in pregnancy. CARL ALPER AND JOSEPH SEITCHIK (intr. by JOSEPH S. HEPBURN). *Hahnemann Med. College.*

3:45 **1490.** Cellular proteins as mercapturic acid precursors. JOHN T. SMITH* AND JOHN L. WOOD. *Univ. of Tennessee.*

4:00 **1491.** Synthesis and microbiological properties of α-keto and α-hydroxy derivatives of some amino acid antagonists. DONALD E. LEWIS* AND KARL DITTMER. *Florida State Univ.*

Metabolism of Pryimidines, Pryimidine Nucleosides and Nucleotides

FRI. P.M.—CONVENTION HALL, ROOM 202

Chairman: C. R. Greenberg

1:30 **1492.** Pathways of synthesis of thymine compounds from C^{14}-formaldehyde and C^{14}-methyl labeled methionine by lymphatic tissues and tumors. SAUL KIT, CHARLES BECK*, ODETTE L. GRAHAM* AND ARTHUR GROSS. *Univ. of Texas, M. D. Anderson Hosp. and Tumor Inst.*

1:45 **1493.** Biosynthesis of the thymine methyl group. DAVID M. GREENBERG AND GLADYS K. HUMPHREYS*. *Univ. of California School of Medicine.*

2:00 **1494.** Pyrimidine metabolism in animal tissues. L. C. MOKRASCH*, M. A. DERKS*, J. CARAVACA* AND S. GRISOLIA. *Univ. of Kansas Med. Ctr.*

2:15 **1495.** Pyrimidine metabolism and formation of RNA cytosine. HAROLD O. KAMMEN AND ROBERT B. HURLBERT (intr. by J. B. WALKER). *M. D. Anderson Hosp. and Tumor Inst.*

2:30 **1496.** Alipathic precursors of pyrimidines in Neurospora. MURIEL BOYD AND J. L. FAIRLEY. *Michigan State Univ.*

2:45 **1497.** Properties of dihydroorotic dehydrogenase. HERBERT C. FRIEDMANN* AND BIRGIT VENNESLAND. *Univ. of Chicago.*

3:00 **1498.** Deoxyriboside synthesis by

Ehrlich ascites cells. MARY EDMONDS (intr. by R. ABRAMS). *Montefiore Hosp. Inst. of Research, Pittsburgh.*

3:15 **1499.** Conversion of thymidine to thymidine nucleotides in vivo. RICHARD L. POTTER AND VINA BUETTNER-JANUSCH (intr. by A. A. CHRISTMAN). *Univ. of Michigan.*

3:30 **1500.** Conversion of purine and pyrimidine ribonucleotides and ribonucleosides to the deoxynucleotides and nucleosides. LAWRENCE GROSSMAN (intr. by MARY ELLEN JONES). *Brandeis Univ.*

3:45 **1501.** Transphosphorylations involving cytidine and deoxycytidine nucleotides. F. MALEY (intr. by G. W. E. PLAUT). *New York Univ. College of Medicine.*

Microorganisms II

FRI. P.M.—CONVENTION HALL, ROOM 300

Chairman: L. P. Vernon

1:30 **1502.** NaCl induction of amino sugars and enzymic lysability of Micrococcus lysodeikticus. STANLEY M. REIMER* AND GERALD LITWACK. *Rutgers, State Univ.*

1:45 **1503.** A synthesis and bacterial degradation of 2,5-dihydroxypyridine. E. J. BEHRMAN AND B. M. PITT (intr. by S. P. HICKS). *New England Deaconess Hosp.* (Pathol.)

2:00 **1504.** Bacterial oxidation of pyridoxine. VICTOR RODWELL*, MIYOSHI IKAWA, BENJAMIN VOLCANI* AND ESMOND E. SNELL. *Univ. of California.*

2:15 **1505.** Microbiological activity of 5-fluorouracil derivatives. J. M. SCHEINER AND R. DUSCHINSKY (intr. by S. H. RUBIN). *Hoffmann-La Roche.*

2:30 **1506.** Utilization of the riboflavin inhibitor 6-chloro-7-methyl-9-(1′-D-ribityl)-isoalloxazine by Lactobacillus casei. ROBERT A. SCALA* AND JOHN P. LAMBOOY. *Univ. of Rochester School of Medicine.*

2:45 **1507.** Purification and properties of the hydrogenase of Desulphovibrio desulphuricans. ALVIN I. KRASNA*, EMANUEL RIKLIS* AND D. RITTENBERG. *Columbia Univ.*

3:00 **1508.** An aspartase inhibitor from protamine fractionated sonic lysates of Bacterium cadaveris. VIRGINIA R. WILLIAMS AND FRANK J. BAGALA, JR.* *Louisiana State Univ.*

3:15 **1509.** Mechanism of resistance to an anti-folic acid drug. ROBERT C. WOOD* AND GEORGE H. HITCHINGS. *Wellcome Research Labs.*

3:30 **1510.** Distribution of lysine racemase activity in bacteria. H. T. HUANG AND J. W. DAVISSON*. *Chas. Pfizer and Co.*

3:45 **1511.** Purine and pyrimidine requirements of a strain of Paramecium aurelia. V. A. TARANTOLA* AND W. J. VAN WAGTENDONK. *Indiana Univ.*

Enzymes: General II

FRI. P.M.—CONVENTION HALL, ROOM 400

Chairman: W. W. Westerfeld

1:30 **1512.** Survey of esterases in relation to phylogenetic levels. Tetrahymena pyriformis W. ELSIE WAINFAN AND GEORGE P. HESS (intr. by MILTON L. SCOTT). *Cornell Univ.*

1:45 **1513.** Mechanism of α-keto acid oxidation. D. RAO SANADI. *Univ. of California School of Medicine.*

2:00 **1514.** Isolation and properties of β-mercaptopyruvate desulfurase. ERNEST KUN AND D. W. FANSHIER*. *Univ. of California.*

2:15 **1515.** Adaptation of liver glucose-6-phosphatase in the rat. R. A. FREEDLAND AND A. E. HARPER (intr. by M. J. JOHNSON). *Univ. of Wisconsin.*

2:30 **1516.** Alkaline phosphatase of swine kidney. FRANCIS BINKLEY. *Emory Univ.*

2:45 **1517.** Preparation of highly purified alkaline kidney phosphatase. OTTO SCHALES AND KAZKO ARAI*. *Tulane Univ. School of Medicine and Alton Ochsner Med. Fndn.*

3:00 **1518.** Properties of vertebrate polyphosphatases. GEORGE G. BERG AND LILLIAN HEICKLEN (intr. by H. C. HODGE). *Univ. of Rochester School of Medicine.*

3:15 **1519.** Enzymatic deamination of pterins. BRUCE LEVENBERG (intr. by OSAMU HAYAISHI). *Natl. Insts. of Health.*

3:30 **1520.** Formation of hydroxybenzoic acids from flavonols in vitro. CARL D. DOUGLASS AND ROSE HOGAN (intr. by PAUL L. DAY). *Univ. of Arkansas School of Medicine.*

3:45 **1521.** A lipoprotein lipase in cow's milk. T. W. QUIGLEY, C. E. ROE AND M. J. PALLANSCH (intr. by W. I. PATTERSON). *EURDD, ARS, U. S. Dept. of Agriculture.*

PAPERS READ BY TITLE

1522. Relationships between calcium and fat absorption. MARGARET G. MOREHOUSE. *Univ. of Southern California.*

1523. Spectroscopic investigation of the myrosin-catalyzed transformation of sinigrin. SIGMUND SCHWIMMER. *Western Regional Research Lab.*

1524. Effect of pyridoxine deficiency on liver coenzyme A. MARY ANN WILLIAMS AND BERNARD HATA (intr. by RUTH OKEY). *Univ. of California.*

AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Forty-eighth Annual Meeting

Monday Afternoon, April 14, 1:30 p.m.

Psychopharmacology I

MON. P.M.—CONVENTION HALL, ROOM F

Chairman: J. H. Wills

1:30 **1525.** Use of two-response reinforcement schedules in psychopharmacology. FRANCES MECHNER AND IRWIN ROSENBERG (intr. by W. M. GOVIER). *Schering Corp.*

1:45 **1526.** Action of tranquilizers on convulsions induced by central nervous system and ganglionic stimulants in mice. HERBERT A. BRAUN AND LEHMAN M. LUSKY.* *Food and Drug. Admin.*

2:00 **1527.** Effects of centrally active drugs on fighting behavior in mice. RALPH E. TEDESCHI, ANNA M. MUCHA AND DAVID H. TEDESCHI (intr. by E. J. FELLOWS). *Smith, Kline & French Labs.*

2:15 **1528.** Action of atropine, benactyzine and scopolamine upon multiple schedule behavior. JOHN J. BOREN AND ALBERT P. NAVARRO (intr. by CLEMENT A. STONE). *Merck Inst.*

2:30 **1529.** Factors influencing acquisition of avoidance behavior and sensitivity to drugs. SAMUEL IRWIN. *Schering Corp.*

2:45 **1530.** Drug modification of the runway behavior of mice as influenced by an aversive stimulus. HARLEY M. HANSON, JAMES A. HUNTZINGER AND JOHN J. WITOSLAWSKI (intr. by CHARLES A. WINTER). *Merck Inst.*

3:00 **1531.** Effects of lateral, third and fourth ventricle injections of cardiac glycosides and LSD in unanesthetized dogs. R. P. BIRCHER,* H. J. BARTELSTONE* AND S. C. WANG. *Sandoz Pharmaceuticals and Columbia Univ.*

3:15 **1532.** Behavioral changes produced by localized injection of drugs into the brain of conscious cats. CHARLES D. WOOD,* JOSEPH E. STONE* AND LLOYD D. SEAGER. *Univ. of Arkansas Med. Ctr.*

3:30 **1533.** Response to psychotomimetic drugs reaching the brain by different injection routes. WILLIAMINA A. HIMWICH, FRANCO RINALDI,* STANTON GOLDSTEIN,* ERMINIO COSTA* AND HAROLD E. HIMWICH. *State Research Hosp., Galesburg, Ill.* (Physiol.)

Analgetics I

MON. P.M.—CONVENTION HALL, ROOM 200

Chairman: H. Isbell

1:30 **1534.** Effect of salicylates on thymus gland of immature rat. N. R. STEPHENSON (intr. by L. I. PUGSLEY). *Dept. of Natl. Health and Welfare, Canada.* (Biochem.)

1:45 **1535.** The dextro isomer of SKF 5137 in man. ARTHUR S. KEATS AND JANE TELFORD.* *Baylor Univ. and Jefferson Davis Hosp.*

2:00 **1536.** Clinical assay of analgesic activity of the substituted diphenylpropylamine, SKF 5137. BENJAMIN CALESNICK. *Hahnemann Med. College.*

2:15 **1537.** Effect of nalorphine on concentration of N-C^{14} methyl labeled levorphanol in plasma and brain of rats. JANE HENG* AND L. A. WOODS. *Univ. of Michigan.*

2:30 **1538.** Comparison of dose-dependent effects of nalorphine with those of levallorphan in the production of graded abstinence in morphine-dependent monkeys. R. H. BURNS,* D. A. MCCARTHY,* G. A. DENEAU* AND M. H. SEEVERS. *Univ. of Michigan.*

2:45 **1539.** Respiratory effects of levorphan and levallorphan in man. STANLEY L. WALLENSTEIN,* J. WELDON BELLVILLE* AND RAYMOND W. HOUDE. *Mem. Cancer Ctr., New York City.*

3:00 **1540.** Methamphetamine and analgesia. CHARLES M. GRUBER, JR. AND MELVIN DE WEESE.* *Lilly Lab. and Louisville Gen. Hosp.*

3:15 **1541.** Release of histamine by meperidine. C. G. VAN ARMAN AND F. M. STURTEVANT. *G. D. Searle and Co.*

3:30 **1542.** Certain aspects of the pharmacology of aurintricarboxylic and salicylic acids in relation to antipyresis. JOAN F. FRIED,* MARCIA WHITE ROSENTHAL* AND JACK SCHUBERT. *Argonne Natl. Lab.* (Biochem.)

3:45 **1543.** Enhancement of sodium salicylate absorption by mephenesin. JULIUS CARR,* GEORGE J. MOURATOFF* AND ROBERT C. BATTERMAN. *New York Med. College.*

4:00 **1544.** Intravenous potency of three new analgesics. HAROLD F. CHASE. *Jefferson Med. College.*

4:15 **1545.** Absorption of aspirin and buffered aspirin from the stomach in man. EDWARD B. TRUITT, JR. AND ANN M. MORGAN.* *Univ. of Maryland.*

Cellular Pharmacology

MON. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: Avram Goldstein

1:30 **1546.** Potassium transport in rabbit kidney cortex slices. WILLIAM O. BERNDT AND DEAN A. LESHER (intr. by D. S. RIGGS). *Univ. of Buffalo.*

1:45 **1547.** Carbonic anhydrase inhibition in the elasmobranch: effect on aqueous humor and cerebrospinal fluid CO_2. THOMAS H. MAREN AND ALBERT FREDERICK.* *Mt. Desert Island Biol. Lab. and Univ. of Florida.*

2:00 **1548.** Binding of manganese by homogenized mouse brain and effect of chlorpromazine. D. C. BORG* AND G. C. COTZIAS. *Brookhaven Natl. Lab.* (Pathol.)

2:15 **1549.** Influence of chlorpromazine on transport of ions into cerebral tissues. JENS CHRISTENSEN, Y. S. LOUISE FENG, E. POLLEY AND A. W. WASE (intr. by B. CALESNICK). *Hahnemann Med. College.*

2:30 **1550.** Intracellular exchange of K^{42} and NA^{24} in liver, kidney and brain. W. C. HOLLAND, G. V. AUDITORE* AND S. COX.* *Vanderbilt Univ.*

2:45 **1551.** Adsorption of heparin by red blood cells. KARL L. ROTH AND ABRAHAM M. FRUMIN (intr. by M. J. FRUMIN). *Albert Einstein Med. Ctr.*

3:00 **1552.** Histamine- and heparin-containing granules as distinct from mitochondria. FU-LI LEE,* PAUL HAGEN AND JACOB FURTH. *Harvard Med. School.*

3:15 **1553.** Biochemical alteration of liver mitochondria by treatment with carbon tetrachloride in vitro and in vivo. DEANE N. CALVERT* AND THEODORE M. BRODY. *Univ. of Michigan.*

3:30 **1554.** Metabolic effects of benzalkonium chloride on baker's yeast. T. G. SCHARFF AND J. L. BECK (intr. by P. K. KNOEFEL). *Univ. of Louisville.*

3:45 **1555.** 2,4-Dinitrophenol and the respiratory chain enzymes of rat brain. HERBERT S. SCHWARTZ* AND S. B. BARKER. *Univ. of Puerto Rico and Univ. of Alabama Med. Ctr.*

4:00 **1556.** Action of certain components of mast cells upon I^{131} distribution in the rat. RONALD R. SCHELINE* AND KENNETH G. SCOTT. *Univ. of California.*

Toxicology I

MON. P.M.—PENN SHERWOOD
DELLA ROBBIA ROOM

Chairman: H. Cullumbine

1:30 **1557.** Effective reduction of acute toxicity of certain pharmacologic agents. BERNARD A. BECKER AND JOHN G. SWIFT (intr. by J. N. STANNARD). *R. J. Strasenburgh Co.*

1:45 **1558.** Protective action of calcium disodium ethylenediaminetetraacetate in acute poisoning by compounds of cadmium and selenium. KATHERINE I. SIVJAKOV* AND HERBERT A. BRAUN. *Food and Drug Admin.*

2:00 **1559.** Antagonism of lethal action of parathion by 3-pyridine acetohydroxamic acid methyl iodide. BERNARD E. CONLEY (intr. by KENNETH P. DUBOIS). *Univ. of Chicago.*

2:15 **1560.** Effects of protein and potassium intake and of certain S compounds on Tl toxicity. WILLIAM B. STAVINOHA* AND G. A. EMERSON. *Univ. of Texas Med. Branch.*

2:30 **1561.** Protective action of the sulfhydryl amino acid, D-penicillamine, against lethal effects of mercuric chloride. H. VASKEN APOSHIAN AND NANCY S. POINTER (intr. by B. H. ROBBINS). *Vanderbilt Univ.*

2:45 **1562.** Toxic effects of sodium selenite on cardiovascular system. MAX HEINRICH AND D. M. MACCANON.* *Univ. of South Dakota.*

3:00 **1563.** Effect of carbon tetrachloride on perfused liver function. G. L. PLAA,* A. J. VALERGA* AND C. H. HINE. *Univ. of California.*

3:15 **1564.** Skin-twitch response in dog as a

measure of local tissue toxicity. JAMES O. HOPPE, L. P. DUPREY,* S. REZNEK* AND F. P. LUDUENA. *Sterling-Winthrop Research Inst.*

3:30 **1565.** Local toxicity from organic moderators. L. E. DETRICK,* H. C. UPHAM* AND THOMAS J. HALEY. *Univ. of California.*

3:45 **1566.** Pathologic changes following exposure to a synthetic lubricant considered for use aboard submarines. M. E. TRACHT,* R. BLAND WILLIAMS, JR., J. F. FAILING, JR.* AND E. L. ELWORTH.* *Naval Med. Research Inst.* (Pathol.)

4:00 **1567.** Venom of the stonefish (*Synanceja horrida*). PAUL R. SAUNDERS (intr. by C. H. THIENES). *Univ. of Southern California and Scripps Inst. of Oceanography.*

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Open House by Laboratories

See page 672 for complete schedule

Films of Interest to Pathologists

See page 644 for schedule

Tuesday Morning, April 15, 9:00 a.m.

Cardiovascular I

TUES. A.M.—CONVENTION HALL, ROOM F

Chairman: B. N. Craver

9:00 **1568.** Lidocaine in control of cardiac arrhythmias. PHILIP HITCHCOCK AND KENNETH K. KEOWN.* *Univ. of Missouri.*

9:15 **1569.** Suppression of cyclopropane-epinephrine arrhythmias by four phenothiazine tranquilizers. MARTIN M. WINBURY, LORRAINE HAUSLER,* JOANNE K. WOLF* AND MONROE J. KLEIN.* *Schering Corp.*

9:30 **1570.** Cardiovascular and antiarrhythmic effects of pentobarbital sodium in dogs after experimental myocardial infarction. MICHAEL OLICHNEY* AND WALTER MODELL. *Cornell Univ. Med. College.*

9:45 **1571.** Role of acetylcholine in aconitine-induced auricular arrhythmias. JOHN YELNOSKY (intr. by BYRON B. CLARK). *Tufts Univ.*

10:00 **1572.** Effectiveness of a chelating agent in terminating cardiac arrhythmias induced by acetyl strophanthidin. A. H. RYAN, S. SOREN,* S. G. COHEN* AND W. WEIL.* *Chicago Med. School.* (Physiol.)

10:15 **1573.** Transmembrane fluxes of K^{42} and incidence of fibrillation as affected by temperature, extracellular K concentration and quinidine. R. L. KLEIN* AND W. C. HOLLAND. *Vanderbilt Univ.*

10:30 **1574.** Atrial arrhythmias and myocardial potassium. PHILLIP E. LEVEQUE (intr. by DAVID B. TYLER). *Univ. of Puerto Rico.*

10:45 **1575.** Effects of vasoconstrictor agents on cardiac excitability and the generation of arrhythmias. JEROME L. GILBERT,* GERTRUDE LANGE* AND C. MCC. BROOKS. *State Univ. of New York College of Medicine.*

11:00 **1576.** Cardiovascular effects of procaine and Lidocaine during general anesthesia. JAMES R. KIMMEY, JR.* AND J. E. STEINHAUS. *Univ. of Wisconsin.*

11:15 **1577.** Locus of vagal action in epinephrine-induced cardiac arrhythmias. PETER E. DRESEL AND MARK NICKERSON. *Univ. of Manitoba Faculty of Medicine.*

11:30 **1578.** Potentiation of epinephrine arrhythmias by a substituted propiophenone. JOANNE I. MOORE* AND HENRY H. SWAIN. *Univ. of Michigan.*

11:45 **1579.** Intracellular recording in dog heart during hypothermia. THEODORE C. WEST AND EVAN L. FREDERICKSON.* *Univ. of Washington.*

Endocrine I

TUES. A.M.—CONVENTION HALL, ROOM 200

Chairman: R. W. Whitehead

9:00 **1580.** Rapid method for measurement of anti-inflammatory activity utilizing fluid volume of the experimentally-inflamed pleural cavity of the rat. DORSEY E. HOLTKAMP, RUTH WANG* AND MARGARET DOGGETT.* *Smith, Kline & French Labs.*

9:15 **1581.** Anti-androgenic activity of a new synthetic phenanthrene derivative. J. J. SELITTO* AND LOWELL O. RANDALL. *Hoffmann-La Roche, Inc.*

9:30 **1582.** Estrogen antagonistic activity of 1 - (*p* - 2 - diethylaminoethoxyphenyl) - 1 - phenyl-2-*p*-anisylethanol (Mer-25). LEONARD J. LERNER (intr. by E. F. VAN MAANEN). *Wm. S. Merrell Co.*

9:45 **1583.** Role of parathyroid and adrenal cortex in experimental gastric ulcer. DAVID LEHR, ISABEL WAJDA* AND MARILYN KRUKOWSKI.* *New York Med. College.*

10:00 **1584.** Relative calorigenic and antigoitrogenic potencies of D- and L-3:5:3′-triiodothyronine in the rat. CYRUS M. GREENBERG,* DORSEY E. HOLTKAMP, ALICE ZAVALYDRIGA* AND JAMES F. KERWIN.* *Smith, Kline & French Labs.*

10:15 **1585.** Hematopoietic effects of combined injections of cobalt and hydrocortisone in the adrenalectomized rat. JAMES W. FISHER (intr. by W. F. CANTRELL). *Univ. of Louisville School of Medicine.*

10:30 **1586.** Anti-hypertensive effects of an aldosterone antagonist. F. M. STURTEVANT. *G. D. Searle & Co.*

10:45 **1587.** Effect of L-3,3′,5-triiodothyronine on epinephrine-induced contraction of isolated rabbit aortic strip. I. SHEMANO AND P. CUSICK (intr. by P. A. MATTIS). *Smith, Kline & French Labs.*

11:00 **1588.** Cortisone—a possible in vitro action. JAMES A. SETLIFF,* ALLAN D. BASS AND CATHERINE CHEATHAM.* *Vanderbilt Univ.*

11:15 **1589.** Effect of pretreatment with

3:5:3′-triiodothryoacetic acid or L-3:5:3′ triiodothyronine on oxygen uptake of rat heart and liver slices. HARRY L. SAUNDERS,* D. NUSS,* CYRUS M. GREENBERG* AND DORSEY E. HOLTKAMP. *Smith, Kline & French Labs.*

11:30 **1590.** Effect of certain tranquilizers on gonadotrophin release in rats. M. EISLER,* R. NERI,* M. RUSSO* AND P. L. PERLMAN. *Schering Corp.*

Metabolism I

TUES. A.M.—PENN SHERWOOD
DELLA ROBBIA ROOM

Chairman: E. Bueding

9:00 **1591.** O-methyl transferase. JULIUS AXELROD AND ROBERT TOMCHICK.* *Natl. Inst. of Mental Health.*

9:15 **1592.** Urinary excretion of normetanephrine by man. ELWOOD H. LABROSSE,* JULIUS AXELROD AND ALBERT SJOERDSMA. *Natl. Inst. of Mental Health and Natl. Heart Inst.*

9:30 **1593.** Further experiments on the origin of diastase in serum and urine. MARTIN M. NOTHMAN AND ALLAN D. CALLOW.* *New England Med. Ctr. and Tufts Univ.*

9:45 **1594.** Demethylation of narcotic drugs and the phenomenon of tolerance. G. J. MANNERING AND A. E. TAKEMORI.* *Univ. of Wisconsin.*

10:00 **1595.** Conjugation and excretion of foreign phenols by fish and amphibia. R. P. MAICKEL,* W. R. JONDORF* AND B. B. BRODIE. *Natl. Heart Inst.*

10:15 **1596.** Hepatic inactivation of succinylcholine in the dog. M. JACK FRUMIN. *Columbia Univ.*

10:30 **1597.** Excretion and localization of C^{14} from quaternary alkyl ether of diethylstilbestrol. J. HENRY WILLS AND SARAH C. KALSER.* *Army Chem. Ctr.*

10:45 **1598.** Enzymatic oxidation of chloral hydrate. JACK R. COOPER AND PAUL J. FRIEDMAN (intr. by N. J. GIARMAN). *Yale Univ.*

11:00 **1599.** Metabolic fate of zoxazolamine in man. ALLAN CONNEY,* J. J. BURNS, NATALIE TROUSOF* AND B. B. BRODIE. *Natl. Heart Inst. and Goldwater Mem. Hosp.*

11:15 **1600.** Oxidative metabolism of drugs by vertebrates. L. E. GAUDETTE,* R. P. MAICKEL* AND B. B. BRODIE. *Natl. Heart Inst.*

11:30 **1601.** Inhibitory effect of dipterex and other organic phosphates on detoxification of malathion. SHELDON D. MURPHY* AND KENNETH P. DUBOIS. *Univ. of Chicago.*

11:45 **1602.** Metabolism of γ-(3-pyridyl)-γ-oxobutyric acid. LENNOX B. TURNBULL,* EDWARD R. BOWMAN* AND HERBERT MCKENNIS, JR. *Med. College of Virginia.* (Biochem.)

Registration Desks

Convention Hall, Monday–Friday (8 A.M.–5 P.M.)
Headquarters Hotels, Sunday (9 A.M.–9 P.M.); Monday (5–9 P.M.)

Tuesday Afternoon, April 15, 1:30 p.m.

Autonomics I

TUES. P.M.—CONVENTION HALL, ROOM F

Chairman: R. F. Furchgott

1:30 **1603.** Correlation of cytological localization and function of neuronal acetylcholinesterase (AChE). Internal or reserve neuronal AChE. TETSUO FUKUDA* AND GEORGE B. KOELLE. *Univ. of Pennsylvania.*

1:45 **1604.** Correlation of cytological localization and function of neuronal acetylcholinesterase (AChE). External or functional AChE. WINIFRED A. KOELLE* AND GEORGE B. KOELLE. *Univ. of Pennsylvania.*

2:00 **1605.** Correlation of cytological localization and function of neuronal acetylcholinesterase (AChE). Comparison of effects of inhibition of total and external neuronal AChE on ganglionic transmission. ROBERT J. MCISAAC* AND GEORGE B. KOELLE. *Univ. of Pennsylvania.*

2:15 **1606.** Interaction of bisquaternary and phosphonate anticholinesterases. B. GOTHELF,* ALEXANDER G. KARCZMAR AND K. BLACHUT.* *Stritch School of Medicine.*

2:30 **1607.** Potentiation between cholinesterase inhibitors. PHILIP ROSENBERG* AND J. M. COON. *Jefferson Med. College.*

2:45 **1608.** Antagonism of anticholinesterases by intracerebral benzoquinonium. G. Y. KOFF* AND J. M. COON. *Jefferson Med. College.*

3:00 **1609.** Cholinesterase content and total volumes of packed erythrocytes of rats bled repeatedly by heart puncture. ERNEST C. HAGAN, PAUL M. JENNER AND WILLIAM I. JONES (intr. by BERT J. VOS). *Food and Drug Admin.*

3:15 **1610.** Pharmacology of phospholine iodide—an alkyl phosphothiocholine. HOWARD A. JEWELL* AND ROBERT A. LEHMAN. *Campbell Pharmaceutical Co.*

3:30 **1611.** Relative efficacy of various prophylactic adjuncts to atropine in sarin poisoning. JOHN F. O'LEARY, J. H. WILLS AND L. A. CARLSTROM.* *U. S. Army Chemical Ctr.*

3:45 **1612.** Adrenergic blocking effect of dibozane. C. E. RAPELA* AND H. D. GREEN. *Bowman Gray School of Medicine.*

4:00 **1613.** Sympatholytic effects of halomid. JOE B. NASH,* GEORGE A. EMERSON, JOHN A. FAUST* AND MELVILLE SAHYUN.* *Univ. of Texas Med. Branch and Sahyun Labs.*

4:15 **1614.** Role of afferent activity from the bladder in regulating its activity. F. H. MEYERS, D. J. MARSH* AND G. SUZUKI.* *Univ. of California Med. Ctr.*

4:30 **1615.** Hemodynamic effects of isoproterenol before and after pilocarpine. ROGER W. SEVY AND ADOLPH P. ROSZKOWSKI.* *Temple Univ. School of Medicine and McNeil Labs., Inc. (Physiol.)*

Central Nervous System Depressants

TUES. P.M.—CONVENTION HALL, ROOM 200

Chairman: S. C. Wang

1:30 **1616.** Servo mechanisms in pharmacology. J. WELDON BELLVILLE* AND JOHN C. SEED. *Memorial Cancer Ctr., New York City and Wellcome Research Labs.*

1:45 **1617.** Relative potency of 1-methyl-5-allyl-5-(1-methyl-2-pentynyl) barbituric acid (compound No. 25398) and thiopental sodium. PETER J. FENNEL, J. WELDON BELLVILLE AND WILLIAM S. HOWLAND (intr. by RAYMOND W. HOUDE). *Memorial Cancer Ctr., New York City.*

2:00 **1618.** Pharmacology of 1-(1-phenylcyclohexyl) piperidine:HCl. GRAHAM CHEN. *Parke, Davis & Co.*

2:15 **1619.** A method of determining relative potency of hypnotics and sedatives. LOUIS R. ORKIN AND THOMAS CHUN.* *Albert Einstein College of Medicine.*

2:30 **1620.** Perphenazine, a potent antiemetic. S. C. WANG. *Columbia Univ.*

2:45 **1621.** Evaluation of 1-phenylcyclohexyl piperidine monohydrobrom[illegible]e (Sernyl) as an anesthetic and preanesthetic agent. ALFRED J. CATENACCI (intr. by JOSEPH R. DIPALMA). *Hahnemann Med. College and Hosp.*

3:00 **1622.** Pharmacological observations with 3,4,5-trimethoxybenzoyl-glycine-diethylamide (Riker 548). GEORG CRONHEIM, JAMES T. GOURZIS* AND I. M. TOEKES.* *Riker Labs.*

3:15 **1623.** Enhancement of duration of drug action by N-ethylpiperidyldiphenylacetate congeners. JAMES M. FUJIMOTO (intr. by F. W. SCHUELER). *Tulane Univ.*

3:30 **1624.** Prolongation of barbiturate sleeping time in evaluation of central nervous

system depressants. L. S. D'AGROSA,* S. YOSHIMURA* AND D. M. GREEN. *Grove Labs.*

3:45 **1625.** Physiological disposition of methitural in man. LEONARD BRAND,* LESTER C. MARK, PETER DAYTON,* DOLORES TALLER* AND E. M. PAPPER. *Columbia Univ., New York Univ. Research Service, Goldwater Mem. Hosp. and Natl. Heart Inst.*

4:00 **1626.** Effect of thiopental on activity of inspiratory neurons in medullary inspiratory areas. DAVID A. BRODIE (intr. by VERNON G. VERNIER). *Merck Inst.*

4:15 **1627.** A study in a series of fluorinated hydrocarbons. JOSEPH F. ARTUSIO, JR. AND ALAN VAN POZNAK.* *New York Hosp. and Cornell Univ. Med. College.*

Cardiovascular II

TUES. P.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: J. R. Di Palma

1:30 **1628.** Peripheral vasodilator action of isoxsuprine. JACK R. SCHMID, IRA W. HILLYARD AND CLINTON B. NASH (intr. by BYRON B. CLARK). *Mead Johnson & Co.*

1:45 **1629.** Cardiac actions of isoxsuprine. CLINTON B. NASH,* VIRGINIA DRINNON* AND BYRON B. CLARK. *Mead Johnson & Co.*

2:00 **1630.** Extravascular smooth muscle actions of isoxsuprine. KENDRICK W. DUNGAN AND PAUL M. LISH (intr. by BYRON B. CLARK). *Mead Johnson & Co.*

2:15 **1631.** Gastrointestinal absorption of isoxsuprine. JOHN H. WEIKEL, JR., PAUL M. LISH* AND PAUL D. JOINER.* *Mead Johnson & Co.*

2:30 **1632.** Comparison of hypotensive and vascular effects of the monophosphoric acid ester of thiamine and thiamine hydrochloride. JOSEPH P. BUCKLEY, NATHAN WATZMAN AND JOHN J. DEFEO (intr. by LYLE BECK). *Univ. of Pittsburgh.*

2:45 **1633.** Antihypertensive properties of furazolidone. VINCENT DESIDERIO AND JOHN R. BEEM (intr. by JOHN H. MOYER). *Hahnemann Med. College and Hosp.*

3:00 **1634.** Hypotensive activity of phenothiazine derivatives on renal hypertensive and normotensive animals. H. MINATOYA (intr. by F. P. LUDUENA). *Sterling-Winthrop Research Inst.*

3:15 **1635.** Circulatory effects of intravenous proclorperazine (Compazine) in humans. VINCENT LANZONI,* TSUNG-HAN LI AND BENJAMIN ETSTEN. *New England Ctr. Hosp. and Tufts Univ.*

3:30 **1636.** Effect of respiratory acidosis on arterial blood pressure and hemodynamics during cyclopropane anesthesia. TSUNG-HAN LI AND BENJAMIN ETSTEN. *New England Ctr. Hosp. and Tufts Univ.*

3:45 **1637.** Hemodynamic effects of mecamylamine. G. G. ROWE, C. A. CASTILLO, D. H. WHITE, JR., D. J. FREEMAN AND G. M. MAXWELL (intr. by C. W. CRUMPTON). *Univ. of Wisconsin.*

4:00 **1638.** Comparative circulatory effects of a series of intravenously injected colloids. R. P. WALTON, J. A. RICHARDSON AND T. D. DARBY.* *Med. College of South Carolina.*

4:15 **1639.** Multiple time concentration curves in urine and renal venous blood after rapid injection into renal artery. IRVING GREEN AND J. M. SOO (intr. by R. P. AHLQUIST). *Med. College of Georgia.*

Pharmacology Society Business Meeting

TUESDAY, 4:30 P.M.—CONVENTION HALL, ROOM B

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

See program on page 544

Wednesday Morning, April 16, 9:00 a.m.

SYMPOSIUM: Processes Terminating Drug Action

WED. A.M.—CONVENTION HALL, ROOM F

Chairman: Thomas C. Butler

9:00 **1640.** Introductory remarks: Termination of drug action by elimination of unchanged drug. THOMAS C. BUTLER. *Univ. of North Carolina.*

9:30 **1641.** Termination of drug action by metabolic inactivation. BERNARD B. BRODIE. *Natl. Insts. of Health.*

10:00 **1642.** Termination of drug action without elimination of drug. Tolerancé and related phenomena. MAURICE H. SEEVERS. *Univ. of Michigan.*

10:30 General discussion.

Renal I

WED. A.M.—CONVENTION HALL, ROOM 200

Chairman: J. G. Foulks

9:00 **1643.** A sequential probability ratio test for detecting diuretic activity in the rat. J. R. CUMMINGS, J. D. HAYNES, L. M. LIPCHUCK AND M. A. RONSBERG (intr. by W. D. GRAY). *American Cyanamid Co.*

9:15 **1644.** Diuretic bioassay in hospitalized patients with congestive failure. GORDON BENDERSKY AND JOHN R. BEEM (intr. by LEWIS C. MILLS). *Hahnemann Med. College and Hosp.*

9:30 **1645.** Effects of diuretics in antihypertensive therapy. EDWARD BOWEN,* JOHN R. BEEM* AND JOHN H. MOYER. *Hahnemann Med. College and Hosp.*

9:45 **1646.** Phenolsulphonphthalein excretion: a renal function test in mice. EDWARD W. PELIKAN AND MICHIKO TSUCHIYA.* *Boston Univ.*

10:00 **1647.** Some differences in the actions of mercurials and chlorothiazide on kidney tissue. R. VARGAS AND E. J. CAFRUNY (intr. by M. H. SEEVERS). *Univ. of Michigan.*

10:15 **1648.** Renal tubular secretion of chlorothiazide (6-chloro-7-sulfamyl-1,2,4-benzothiadiazine-1,1-dioxide). JOHN E. BAER,* KARL H. BEYER, HORACE F. RUSSO* AND DAVID C. TITUS.* *Merck Inst.*

10:30 **1649.** Effect of acetazolamide on mercurial diuresis. DOUGLAS S. RIGGS AND D. A. BERKSON.* *Univ. of Buffalo Med. School.*

10:45 **1650.** Effects of ammonium chloride and sodium bicarbonate on intrarenal blood distribution in rats treated with mercaptomerin. J. F. PALMER AND E. J. CAFRUNY (intr. by M. H. SEEVERS). *Univ. of Michigan.*

11:00 **1651.** Mercurial diuresis in dogs with diabetes insipidus. TRACY B. MILLER* AND DOUGLAS S. RIGGS. *Univ. of Buffalo.*

11:15 **1652.** A study of the diuretic effect of triamcinolone (9α-fluoro-11β,16α,17α,21-tetrahydroxy-1,4-pregnadiene-3,20-dione). L. A. WOZNIAK, A. PAINO, I. RINGLER AND R. R. ROEPKE (intr. by EARL H. DEARBORN). *American Cyanamid Co.*

11:30 **1653.** Reactivity of renal vascular adrenergic receptors. LEWIS C. MILLS, JOHN H. MOYER AND CARROLL A. HANDLEY. *Hahnemann Med. College and Baylor Univ.*

Analgetics II

WED. A.M.—CONVENTION HALL, ROOM 300

Chairman: E. L. Way

9:00 **1654.** Analgesic response and N-dealkylation of narcotics after short-term administration of morphine, nalorphine and normorphine. JOSEPH COCHIN AND JULIUS AXELROD. *Natl. Insts. of Health.*

9:15 **1655.** Drug synergism (potentiation) in pain relief in man, papaverine and morphine. H. K. BEECHER, S. G. MACRIS,* J. S. GRAVENSTEIN* AND C. W. REICHLE.* *Harvard Med. School.*

9:30 **1656.** Absorption of aspirin from the gastrointestinal tract. JACK R. LEONARDS. *Western Reserve Univ.* (Biochem.)

9:45 **1657.** Relative clinical analgesic potency of oral and parenteral metopon. RAYMOND W. HOUDE AND STANLEY L. WALLENSTEIN.* *Mem. Cancer Ctr., New York City.*

10:00 **1658.** Effects of analgesic doses of methadone, meperidine and morphine on pain-conditioned inhibition of lever pressing in rats. R. E. BELLEVILLE,* F. T. PESCOR,*

H. E. HILL* AND A. WIKLER. *Addiction Research Ctr., Lexington, Ky.*

10:15 **1659.** Thresholds of electrical excitability and electrograms in monkeys with permanently implanted cortical and subcortical electrodes during a cycle of morphine 'addiction.' G. A. DENEAU* AND M. H. SEEVERS. *Univ. of Michigan.*

10:30 **1660.** Prolongation and potentiation of oral codeine analgesia in the rat. BERNARD A. BECKER (intr. by EDWIN E. HAYS). *R. J. Strasenburgh Co.* (Biochem.)

10:45 **1661.** Studies of norcodeine in man. H. F. FRASER, H. ISBELL AND G. D. VAN HORN.* *Addiction Research Ctr., Lexington, Ky.*

11:00 **1662.** Analgesic testing—'single' versus 'double blind' methods. ROBERT C. BATTERMAN. *New York Med. College.*

11:15 **1663.** Effects of narcotic analgetics and antagonists on tooth-pulp thresholds and respiratory minute volumes in rabbits. HUBERT C. STANTON,* H. H. KEASLING, E. G. GROSS, L. MARSHALL* AND C. W. HIRSCHLER.* *State Univ. of Iowa.*

11:30 **1664.** Effect of drugs on distribution of Cx-reactive protein and sialic acids in rabbit serum. NICHOLAS M. CAMBOSOS,* H. GEORGE MANDEL AND PAUL K. SMITH. *George Washington Univ.*

Metabolism II

WED. A.M.—PENN SHERWOOD
DELLA ROBBIA ROOM

Chairman: H. Tabor

9:00 **1665.** Metabolism of chlorpromazine to chlorpromazine sulfoxide by liver microsomes. J. J. KAMM,* J. R. GILLETTE* AND B. B. BRODIE. *Natl. Heart Inst.*

9:15 **1666.** Oxidation of chlorpromazine to chlorpromazine sulfoxide by model systems. J. V. DINGELL,* J. R. GILLETTE* AND B. B. BRODIE. *Natl. Heart Inst.*

9:30 **1667.** Fate, distribution and excretion of promazine. SIDNEY S. WALKENSTEIN* AND JOSEPH SEIFTER. *Wyeth Inst.*

9:45 **1668.** Effect of chlorpromazine on blood alcohol level. T. N. BURBRIDGE, DALE TIPTON,* V. C. SUTHERLAND* AND A. SIMON.* *Univ. of California.*

10:00 **1669.** Effect of fasting on ethanol metabolism of rat liver slices. MARION E. SMITH* AND HENRY W. NEWMAN. *Stanford Univ.*

10:15 **1670.** Metabolism of C-1^{14} ethanol to $C^{14}O_2$ by cerebral cortex in vitro. V. C. SUTHERLAND,* T. N. BURBRIDGE AND A. SIMON.* *Univ. of California.*

10:30 **1671.** Comparative pharmacology of the blood-cerebrospinal fluid barrier in vertebrates. CHARLES G. ZUBROD AND DAVID P. RALL. *Natl. Cancer Inst. and Mt. Desert Island Biol. Lab.*

10:45 **1672.** Barbital penetration into the rat brain. T. LAMAR KERLEY,* GEORGE K. W. YIM* AND C. JELLEFF CARR. *Purdue Univ.*

11:00 **1673.** Marsilid metabolism. SIDNEY HESS AND HERBERT WEISSBACH (intr. by S. UDENFRIEND). *Natl. Heart Inst.*

11:15 **1674.** Reversal of iproniazid inhibition of monoamine oxidase. MELVYN I. GLUCKMAN AND AMEDEO S. MARRAZZI. *V. A. Research Labs. in Neuropsychiatry, Pittsburgh.*

11:30 **1675.** Effect of iproniazid upon serotonin metabolism. BERNARD KABAKOW, I. BERNARD WEINSTEIN AND GEORGE ROSS (intr. by PHILIP A. LIEF). *Montefiore Hosp., New York City.*

11:45 **1676.** Hydrolysis of acetylisoniazid in vivo. ALLAN S. YARD* AND HERBERT MCKENNIS, JR. *Med. College of Virginia.*

Placement Service

Center Building, Convention Hall

Wednesday Afternoon, April 16, 1:30 p.m.

Cardiovascular III

WED. P.M.—CONVENTION HALL, ROOM 200

Chairman: A. E. Farah

1:30 **1677.** Relationship of potassium and calcium to hypothermic ventricular fibrillation. W. R. BEAVERS AND B. G. COVINO (intr. by ANDRES GOTH). *Univ. of Texas Southwestern Med. School and Boston Univ. Med. School.*

1:45 **1678.** Factors influencing contraction in glycerinated myocardial tissue. F. NORMAN BRIGGS. *Harvard Med. School.*

2:00 **1679.** Effects of acetylcholine on Na and K exchange in turtle sinus and atria. P. MAZEL* AND W. C. HOLLAND. *Vanderbilt Med. School.*

2:15 **1680.** Distribution of norepinephrine in dog heart. V. H. COHN, JR.,* H. M. MALING, B. HIGHMAN AND P. A. SHORE. *Natl. Insts. of Health.*

2:30 **1681.** Electrophoretic studies on protein binding of digitoxin. JAMES L. SPRATT* AND GEORGE T. OKITA. *Argonne Cancer Research Hosp. and Univ. of Chicago.*

2:45 **1682.** Relation of carotid sinus to digitoxin bradycardia. T. F. REDICK* AND P. L. MCLAIN. *Univ. of Pittsburgh School of Medicine.*

3:00 **1683.** Reserpine antagonism of digitalis heart block. JOSEPH R. DI PALMA. *Hahnemann Med. College and Hosp.*

3:15 **1684.** Differences in plasma distribution of potassium as chloride and glutamate, in the digitalis intoxicated dog. N. WILLIAMS* AND A. C. KEYL. *Northwestern Univ. Med. School.*

3:30 **1685.** Effect of quinidine pretreatment on ouabain and strophanthidin toxicity in isolated rabbit atria. JOSEPH V. LEVY* AND THEODORE C. WEST. *Univ. of Washington.*

3:45 **1686.** A sensitive method for simultaneously recording contractility and respiration of heart muscle. KWANG SOO LEE. *State Univ. of New York College of Medicine.*

4:00 **1687.** Effects of quinidine on reactivity of a ventricular pacemaker. RALPH BAER* AND JAY ROBERTS. *Cornell Univ. Med. College.*

Autonomics II

WED. P.M.—NURSES BLDG., ROOM 102

Chairman: K. I. Melville

1:30 **1688.** Increased urinary elimination of norepinephrine and epinephrine after dibenzyline. B. G. BENFEY,* G. LEDOUX* AND K. I. MELVILLE. *McGill Univ.*

1:45 **1689.** Plasma concentrations of adrenaline and noradrenaline during intravenous infusions in man. GERALD COHEN, MARCEL GOLDENBERG AND BERNARD HOLLAND (intr. by ALFRED GELLHORN). *Columbia Univ.*

2:00 **1690.** Effect of levarterenol on renal blood flow and vascular capacity. ALI MEHRIZI (intr. by R. P. AHLQUIST). *Med. College of Georgia.*

2:15 **1691.** Potentiation of inhibitory effects of epinephrine and isoproterenol. A. P. ROSZKOWSKI* AND GEORGE B. KOELLE. *Univ. of Pennsylvania.*

2:30 **1692.** Contributions to knowledge of N-isopropylaterenol vasopressor effects. GERTRUDE D. MAENGWYN-DAVIES AND DONALD T. WALZ.* *Georgetown Med. Ctr.*

2:45 **1693.** Mechanisms of denervation sensitization. MARK NICKERSON AND HARVEY D. HOUSE.* *Univ. of Manitoba Faculty of Medicine, Canada.*

3:00 **1694.** A single receptor theory of autonomic function. N. M. BALOTIN AND C. K. GORBY (intr. by J. M. COON). *Jefferson Med. College.*

3:15 **1695.** Pharmacologic studies of certain nucleosides and nucleotides. P. V. BUDAY,* C. JELLEFF CARR AND TOM S. MIYA. *Purdue Univ.*

3:30 **1696.** Tremorine antagonism studies with a new anticholinergic agent 1-methyl-1, 4,5,6,-tetrahydro-2-pyrimidylmethyl-α-cyclohexyl-phenylglycolate HCl S.1-1236. S. Y. P'AN, J. F. GARDOCKI AND R. CARIOTO.* *Chas. Pfizer & Co., Inc.*

3:45 **1697.** Ganglionic stimulant selectivity of heterocyclic ethyltrimethylammoniums. S. C. HARVEY, R. K. ORKAND,* S. Y. CHOU* AND W. HERZ.* *Univ. of Utah College of Medicine and State Univ. of Florida.*

4:00 **1698.** Effect of pilocarpine on intracellular distribution of calcium in rat salivary gland. ROBERT H. DREISBACH. *Stanford Univ.*

4:15 **1699.** Effect of atropine tannate on gastric secretion. FREDERICK STEIGMANN. *Hektoen Inst. for Med. Research and Cook County Hosp.*

Pharmacology Society Dinner

WEDNESDAY, 7:00 P.M.—BENJAMIN FRANKLIN, BALLROOM

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Exhibits—Inspection Periods

Monday through Thursday: 9 A.M. to 5 P.M.
Friday: 9 A.M. to 1 P.M.

Thursday Morning, April 17, 9:00 a.m.

SYMPOSIUM: Passage of Drugs Across Biological Barriers

THURS. A.M.—CONVENTION HALL, ROOM F

Chairman: Sumner M. Kalman

9:00 **1700.** Gastrointestinal absorption and secretion of drugs. C. ADRIAN M. HOGBEN. *George Washington Univ.*

9:30 **1701.** Passage of drugs into the central nervous system. STEVEN MAYER. *Washington Univ.*

10:00 **1702.** Transport processes in bacteria. BERNARD D. DAVIS. *Harvard Med. School.*

10:30 **1703.** Renal transport mechanisms. ALFRED E. FARAH. *State Univ. of New York, Syracuse.*

Renal II: Histamine and Antihistaminics

THURS. A.M.—CONVENTION HALL, ROOM 200

Chairman: Karl H. Beyer

9:00 **1704.** Dichlorphenamide (1,3-disulfamyl-4,5-dichlorobenzene), its comparative pharmacology as a carbonic anhydrase inhibitor. HORACE F. RUSSO,* KARL H. BEYER, JOHN E. BAER* AND AUDREY S. HAIMBACH.* *Merck Inst.*

9:15 **1705.** Effect of NH_4Cl, ethionine and methionine on renal glutaminase I activity and urinary pH. L. GOLDSTEIN. *Boston Univ.*

9:30 **1706.** Inhibition of renal tubular transport of N^1-methylnicotinamide (NMN) by symmetrical bis-quaternary compounds. R. L. VOLLE,* R. E. GREEN AND L. PETERS. *Kansas Univ.*

9:45 **1707.** Renal excretion characteristics of azauridine-C^{14}. A. D. WELCH, R. E. HANDSCHUMACHER,* S. C. FINCH,* R. L. VOLLE,* R. E. GREEN AND L. PETERS. *Yale Univ. and Kansas Univ.*

10:00 **1708.** Renal synthesis of blood glucose. W. P. MCCANN AND J. R. JUDE (intr. by E. K. MARSHALL). *Johns Hopkins School of Medicine and Natl. Cancer Inst.*

10:15 **1709.** Histamine liberation and optical isomerism. I. Histamine liberation by dextrorphan and levorphan tartrates. M. B. SLOMKA. *Univ. of Texas.*

10:30 **1710.** Effect of antihistaminics on cardiovascular response of anesthetized dogs to sympathomimetic amines. H. L. ZAUDER AND L. R. ORKIN. *Albert Einstein College of Medicine.*

10:45 **1711.** Sustained ionic release of antihistaminics. JOHN G. SWIFT (intr. by J. N. STANNARD). *R. J. Strasenburgh Co.*

11:00 **1712.** Pharmacological properties of hydroxyzine and some related derivatives. J. J. REUSE (intr. by T. J. HALEY). *Univ. Med. School, Brussels.*

Blocking Agents: Metabolism III

THURS. A.M.—FOOD SERVICES BLDG., ROOM 500

Chairman: K. P. DuBois

9:00 **1713.** Central action of ganglionic blocking agents. ROBERT K. MURRAY, LLOYD BECK AND DAVID F. BOHR (intr. by M. H. SEEVERS). *Univ. of Michigan.*

9:15 **1714.** Effect of muscle-relaxant drugs on esophageal sphincters. EVAN L. FREDERICKSON AND ERIC A. SCHENK (intr. by J. M. DILLE). *Univ. of Washington.*

9:30 **1715.** Effect of histamine liberators on action of *d*-tubocurarine. E. G. ANDERSON* AND D. F. MAGEE. *Univ. of Washington.*

9:45 **1716.** Hexafluorenium: neuromuscular and anticholinesterase effect. FRANCIS F. FOLDES, R. E. MOLLOY,* E. K. ZSIGMOND* AND J. A. ZWARTZ.* *Mercy Hosp. and Univ. of Pittsburgh.*

10:00 **1717.** Action of inhibitors on normal and atypical human serum cholinesterase. W. KALOW AND R. O. DAVIES.* *Univ. of Toronto.*

10:15 **1718.** Muscle-relaxant properties of dicyclopropyl ketoxime (MR-710). L. E. BLOCKUS,* G. M. EVERETT AND R. K. RICHARDS. *Abbott Labs.*

10:30 **1719.** Spontaneous contractions of veratrinized isolated frog muscles. C. P. KRAATZ. *Jefferson Med. College.*

10:45 **1720.** Serotonin-O-glucuronide; an alternate route of serotonin metabolism. HERBERT WEISSBACH,* BETTY G. REDFIELD* AND SIDNEY UDENFRIEND. *Natl. Heart Inst.*

11:00 **1721.** Detoxification of furfurylideneacetone by erythrocytes. M. G. HARDINGE AND B. R. MARSH (intr. by C. M. GRUBER). *College of Med. Evangelists.*

11:15 **1722.** Metabolism of foreign compounds by arthropods. W. R. JONDORF,* R. P. MAICKEL* AND B. B. BRODIE. *Natl. Heart Inst.*

Thursday Afternoon, April 17, 1:30 p.m.

Cardiovascular IV

THURS. P.M.—CONVENTION HALL, ROOM 200

Chairman: C. J. Lambertsen

1:30 **1723.** Analysis of inotropic action of ouabain on isolated atria. JOHN R. BLINKS (intr. by EUGENE M. RENKIN). *Natl. Heart Inst.* (Physiol.)

1:45 **1724.** Cerebral site of action of compounds with conspicuous pressor and inotropic effects. JOHN GATGOUNIS* AND R. P. WALTON. *Med. College of South Carolina.*

2:00 **1725.** Effects of acute hypoxia on cardiac contractility. EUGENE F. WOODS* AND JAMES A. RICHARDSON. *Med. College of South Carolina.*

2:15 **1726.** Inotropic action in a series of closely related quaternary ammonium compounds. LESLIE P. MCCARTY,* WOO CHOO LEE* AND F. E. SHIDEMAN. *Univ. of Wisconsin Med. School.*

2:30 **1727.** Isobutamide in out-clinic patients with heart failure. MORTON FUCHS (intr. by THOMAS C. BARNES). *Hahnemann Med. College and Hosp.*

2:45 **1728.** Effect of atropine, thiopental sodium or succinylcholine and Indoklon on the heart. ALFRED S. C. LING* AND JOHN C. KRANTZ, JR. *Univ. of Maryland.*

3:00 **1729.** Evaluation of factors affecting cardiac function during open-heart surgery. T. D. DARBY, E. A. ALDINGER, W. H. LEE, JR. AND J. M. TENNEY (intr. by R. P. WALTON). *Med. College of South Carolina.*

3:15 **1730.** Some cardiovascular effects of intravascular local anesthesia. D. C. KROEGER,* J. G. WEATHERRED* AND E. L. SMITH. *Univ. of Texas Dental Branch.* (Physiol.)

3:30 **1731.** Action of tetramethylammonium on mammalian heart. WOO CHOO LEE* AND F. E. SHIDEMAN. *Univ. of Wisconsin Med. School.*

3:45 **1732.** Altered thyroid states and cardiac responses to epinephrine and norepinephrine in rabbits maintained on a high cholesterol-fat diet. K. I. MELVILLE, R. MARTEL* AND H. E. SHISTER.* *McGill Univ.*

4:00 **1733.** Norepinephrine potentiation of endogenous vasopressin. MAYNARD B. CHENOWETH, ROBERT C. REYNOLDS* AND PHILIP J. SHEA.* *Dow Chemical Co.*

Toxicology II; Endocrine II

THURS. P.M.—PENN SHERWOOD DELLA ROBBIA ROOM

Chairman: Victor A. Drill

1:30 **1734.** Acute, subacute and chronic toxicity of prochlorperazine (2-chloro-10-[3′(N-methylpiperazinyl)-propyl]-phenothiazine) in mice, rats and dogs. EDWARD MACKO AND RICHARD L. STEELMAN (intr. by PAUL A. MATTIS). *Smith, Kline & French Labs.*

1:45 **1735.** Toxicity of supinine and lasiocarpine. C. L. ROSE,* P. N. HARRIS AND K. K. CHEN. *Lilly Research Labs.*

2:00 **1736.** Chronic toxicities of two food colors: FD and C yellow nos. 3 and 4 (yellow AB and yellow OB). WALTER H. HANSEN,* O. GARTH FITZHUGH AND ARTHUR A. NELSON.* *Food and Drug Admin.*

2:15 **1737.** Chemophysiological studies with *o*-, *m*- and *p*-chloroacetanilide in mice, rats and guinea pigs. MARY F. ARGUS, MARJORIE P. NEWELL, JOSEPHINE M. GRYDER, TREVA L. SEEPE, G. CALDES, J. T. HENDERSON AND F. E. RAY (intr. by WILLIAM B. DEICHMANN). *Univ. of Florida.*

2:30 **1738.** Comparative studies on toxicity of *ortho*, *meta* and *para* isomers of N, N-diethyltoluamide. ANTHONY M. AMBROSE, DONALD K. HUFFMANN* AND RICHARD T. SALAMONE.* *U. S. Army Environmental Health Lab.*

2:45 **1739.** Measurement and characterization of a glucagon-like material in human and dog blood. MAYNARD H. MAKMAN,* RICHARD S. MAKMAN* AND EARL W. SUTHERLAND. *Western Reserve Univ.*

3:00 **1740.** An in vivo system for detection of the neural hormone responsible for ACTH secretion in stress. SUSAN EPSTEIN LEEMAN* AND PAUL L. MUNSON. *Harvard Univ.*

3:15 **1741.** Activation of adrenal phosphorylase by ACTH. ROBERT C. HAYNES, JR. (intr. by EARL W. SUTHERLAND). *Western Reserve Univ.*

3:30 **1742.** Trauma on liver non-protein sulfhydryl of adrenal demedullated mice. LYLE V. BECK AND VIRGINIA D. RIECK. *Univ. of Pittsburgh.*

3:45 **1743.** Intravenous antidiuretic potency of vasopressins in pigs, with observations on porcine renal function. ROBERT A. MUNSICK,* WILBUR H. SAWYER* AND H. B. VAN DYKE. *Columbia Univ.*

4:00 **1744.** Differences in antidiuretic response of rats to intravenous administration of arginine and lysine vasopressin. WILBUR H. SAWYER (intr. by H. B. VAN DYKE). *Columbia Univ.*

Pharmacology Society Business Meeting

THURSDAY, 4:30 P.M.—CONVENTION HALL, Room B

Visible Index and Message Center

Consult the visible index of registrants to locate your friends—Convention Hall, off the Main Lobby

Press Room

Room 304, Convention Hall

Federation Office

Room 305, Convention Hall
Rooms 216–217, Bellevue-Stratford Hotel

Friday Morning, April 18, 9:00 a.m.

Psychopharmacology II

FRI. A.M.—CONVENTION HALL, ROOM F

Chairman: V. V. Cole

9:00 **1745.** A comparison of the psychological effects of chlorpromazine and secobarbital in schizophrenics. CONAN KORNETSKY, MANSON PETTIT,* RONALD WYNNE* AND EDWARD EVARTS.* *Natl. Inst. of Mental Health and St. Elizabeth's Hosp.*

9:15 **1746.** Comparative testing of daytime sedatives and hypnotic medications. ARTHUR J. GROSSMAN,* ROBERT C. BATTERMAN AND PAUL LEIFER.* *New York Med. College.*

9:30 **1747.** Effects of meprobamate on prisoners. NATHAN BLUMBERG, JAMES C. MUNCH AND M. MORELLO (intr. by H. C. HODGE). *Hahnemann Med. School and Hosp. and Eastern State Penitentiary.*

9:45 **1748.** Phenyltoxalamine — sedative properties. GEORGE MOURATOFF,* ROBERT C. BATTERMAN, ARTHUR J. GROSSMAN* AND PAUL LEIFER.* *New York Med. College.*

10:00 **1749.** Hallucinatory effect in man of acetylcholine inhibitors. CARL C. PFEIFFER, HENRY B. MURPHREE,* ELIZABETH H. JENNEY,* MASON G. ROBERTSON,* A. HENRY RANDALL* AND LAURANCE BRYAN.* *Emory Univ.*

10:15 **1750.** Experimental states of catatonia elicited by bulbocapnine and some phenothiazine compounds. SUE P. KOUZMANOFF* AND RICHARD TISLOW. *Wyeth Inst.*

10:30 **1751.** Mechanism of phenylquinone writhing. MARCUS N. CARROLL, JR.* AND ROBERT K. S. LIM. *Miles-Ames Research Lab.*

10:45 **1752.** Bulbocapnine catatonia in mice. MARGARET E. GREIG, ROBERT A. WALK* AND ANNA J. GIBBONS.* *Upjohn Co.*

11:00 **1753.** Effects of drugs on chemically and electrically induced ejaculation. JEROME H. JAFFE* AND SYDNEY ELLIS. *Temple Univ. and Woman's Med. College.*

Anticonvulsants; Central Stimulants

FRI. A.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: P. A. Mattis

9:00 **1754.** Convulsions produced in spinal cat by cord stimulation. DON W. ESPLIN. *Univ. of Utah College of Medicine.*

9:15 **1755.** Effects of drugs on spinal asphyxial convulsions in mice. J. W. BASTIAN AND S. RIDLON (intr. by N. ERCOLI). *Armour Labs.*

9:30 **1756.** Comparative protective effects of drugs against intravenous metrazol in mice and cats. S. A. RIDLON AND J. W. BASTIAN (intr. by N. ERCOLI). *Armour Labs.*

9:45 **1757.** Pharmacological studies with 2-(diethylamine) ethyl (2,2′ dipyridyl) amine dihydrochloride (IN 33), a compound having apparent central stimulant properties. THOMAS B. O'DELL AND JOSEPH H. MIRSKY.* *Irwin, Neisler & Co.*

10:00 **1758.** Dimethylaminoethyltheophylline (Eladin): central stimulant and other pharmacological properties. HAROLD BLUMBERG, STEVEN CARSON,* HYMAN B. DAYTON,* EDWARD STEIN* AND SAMUEL M. GORDON.* *Endo Labs.*

10:15 **1759.** Effect of repeated convulsive doses of Indoklon in dogs and monkeys. JOHNSON S. L. LING,* ALFRED S. C. LING,* EDWARD B. TRUITT, JR. AND JOHN C. KRANTZ, JR. *Univ. of Maryland.*

10:30 **1760.** Action of dicyclopropyl ketoxime (MR-710) in clinical tetanus. R. K. RICHARDS, L. E. BLOCKUS,* H. ELAM* AND M. A. PERLSTEIN.* *Abbott Labs. and Cook County Hosp.*

10:45 **1761.** Anti-metrazol potency of bromisovalum and certain related acylureas. CHARLES R. BOSHART* AND H. K. IWAMOTO. *Purdue Univ. and Univ. of Buffalo.*

11:00 **1762.** Pharmacologic study of a series of carbamate derivatives of alpha-methylbenzylamine. N. W. DUNHAM* AND T. S. MIYA. *Purdue Univ.*

11:15 **1763.** Effects of tranquilizers and antiepileptic drugs on EEG-flicker response and on convulsive behavior. T. C. BARNES. *Hahnemann Med. College.*

11:30 **1764.** Significance of brain carbonic anhydrase in induction of seizure pattern in newborn animals. J. GORDON MILLICHAP. *Albert Einstein College of Medicine.*

11:45 **1765.** Electroshock threshold and drug effects in endocrine deficiencies. S. DeSalva, R. Evans, C. Johnson and W. Schauer (intr. by N. Ercoli). *Armour Labs.*

Cardiovascular V

Fri. a.m.—Convention Hall, Room 200

Chairman: G. H. Acheson

9:00 **1766.** Comparative effects of Win 5494 on left coronary flow. J. Richard R. Bobb and Harold D. Green. *Bowman Gray School of Medicine.* (Physiol.)

9:15 **1767.** Effects of phenyl-2-butyl norsuprifen-HCl on systemic, pulmonary and coronary hemodynamics and metabolism of the dog. G. M. Maxwell,* C. A. Castillo,* D. H. White, Jr.* and C. W. Crumpton. *Univ. of Wisconsin.*

9:30 **1768.** Evaluation of cyclospasmol and coralgil in effort angina. Seymour H. Rinzler and Leon J. Warshaw.* *Beth Israel Hosp., New York City.*

9:45 **1769.** Antiaccelerator and coronary dilator actions of new poly-methoxyphenyl derivatives. Alexander G. Kraczmar, Priscilla Bourgault* and Bill Elpern.* *Sterling-Winthrop Research Inst. and Stritch School of Medicine.*

10:00 **1770.** Effects of decrease in tone on blood pressure responses to epinephrine. James G. Hilton. *Univ. of Mississippi.*

10:15 **1771.** Effects of pentolinium tartrate on blood pressure, heart rate, cardiac output and microscopic circulation of the dog. R. A. Waud. *Univ. of Western Ontario.*

10:30 **1772.** Mechanism of cardiovascular actions of hexahydroazepine-propionamidoxime (SU-4029). R. A. Maxwell, A. J. Plummer, A. I. Daniel,* F. Schneider* and H. Povalski.* *CIBA Pharmaceutical Products, Inc.*

10:45 **1773.** Abolition of vasopressin tachyphylaxis. Robert W. Gardier* and Benedict E. Abreu. *Pitman-Moore Co*

11:00 **1774.** Cardiovascular actions of Rauwolscine. Bernard Levy* and George B. Koelle. *Univ. of Pennsylvania.*

11:15 **1775.** Pharmacologic study of a new organic nitrate and the mechanism of action of this class of drugs. R. H. Buller* and C. Jelleff Carr. *Purdue Univ. School of Pharmacy.*

11:30 **1776.** Protection against shock induced by mesenteric artery occlusion. S. G. Hershey, S. Lanza,* E. A. Rovenstine and S. Baez. *New York Univ.-Bellevue Med. Ctr. and Beth Israel Hosp.*

11:45 **1777.** Perphenazine (Trilafon) and chlorpromazine in experimental shock. J. M. McKenna,* F. E. Roth* and W. M. Govier. *Seton Hall Univ. and Schering Corp.*

Chemotherapy

Fri. a.m.—Penn Sherwood
Della Robbia Room

Chairman: F. O. Kelsey

9:00 **1778.** Antibiotics and influenza mortality. S. Yoshimura,* L. S. D'Agrosa* and D. M. Green. *Grove Labs., Inc.*

9:15 **1779.** Comparison of in vivo and in vitro methods of testing of a new dosage form of sustained release potassium penicillin G. Bernard Friedland (intr. by H. C. Hodge). *Key Corp., Pharmaceuticals.*

9:30 **1780.** Serum cholesterol response to digestive enzyme treatment in multiple sclerosis. Clinton H. Thienes. *Inst. of Med. Research, Huntington Mem. Hosp.*

9:45 **1781.** Effect of Daraprim on incorporation of ureidosuccinic acid and orotic acid into ribonucleic acid pyrimidines. Elise Ann Brown and Leticia T. Angeles (intr. by Paul K. Smith). *George Washington Univ.*

10:00 **1782.** Pharmacological effects of nitrogen mustards of aliphatic amino acids. William L. Nyhan* and H. Busch. *Univ. of Illinois College of Medicine.*

10:15 **1783.** Absorption of amethopterin in subjects with acute leukemia. M. V. Freeman, E. Frei, III and G. D. Press (intr. by H. M. Maling). *Natl. Cancer Inst.*

10:30 **1784.** Quantitative action of parasiticides. L. H. Saxe and Gilbert F. Fisher (intr. by D. T. Watts). *West Virginia Univ.*

10:45 **1785.** Antibody-resistance in Trypanosoma equiperdum. William Cantrell. *Univ. of Louisville.*

11:00 **1786.** Chemoprophylaxis of poliomyelitis with polylysine in mice. Kenneth W. Cochran. *Univ. of Michigan.*

11:15 **1787.** Studies with certain pyrimidines in virus chemotherapy. Ariel C. Hollinshead* and Paul K. Smith. *George Washington Univ.*

11:30 **1788.** Normal and immune serum therapy in experimental pseudomonas infection. R. Carl Millican and John D. Rust.* *Natl. Insts. of Health.*

READ BY TITLE

1789. Chronic toxicity of 4′,5 dichlorosalicylanilide, a proposed amebacide, in macaques. ARSENY K. HRENOFF* AND HAMILTON H. ANDERSON. *Univ. of California.*

1790. Development of acute and chronic tolerance to suppression of avoidance behavior by perphenazine and chlorpromazine. SAMUEL IRWIN. *Schering Corp.*

1791. Protective action of antibiotics in hemorrhagic shock. M. K. LIN (intr. by E. A. ROVENSTINE. *New York Univ. Post-Grad. Med. School.*

AMERICAN SOCIETY FOR EXPERIMENTAL PATHOLOGY

Forty-third Annual Meeting

Tuesday Morning, April 15, 9:00 a.m.

Tissue Culture

TUES. P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: Bernard M. Wagner

9:00 **1792.** Lack of effect of heparin on mitosis and cell growth in L strain. KLAUS G. BENSCH, DONALD W. KING AND STANLEY SIMBONIS (intr. by H. S. N. GREENE). *Yale Med. School.*

9:15 **1793.** In vivo properties of tissue culture cell lines. LEWIS CORIELL*, ROBERT MACALLISTER* AND BERNARD M. WAGNER. *Children's Hosp. of Philadelphia and South Jersey Med. Research Inst.*

9:30 **1794.** Relation between protein and lipid synthesis in L strain cells. DONALD W. KING, EDWARD L. SOCOLOW AND KLAUS G. BENSCH. *Yale Med. School.*

9:45 **1795.** Comparative stimulation of growth and differentiation of fibroblasts by tissue extracts in vivo and in vitro. ROBERT H. EDWARDS,* HELEN MAGANINI,* SEVERINO SARMENTA* AND GEORGE M. HASS. *Presbyterian-St. Luke's Hosp., Chicago.*

10:00 **1796.** Protein and amino acid studies in strain L cells. STANLEY SIMBONIS, DONALD W. KING AND KLAUS G. BENSCH (intr. by H. S. N. GREENE). *Yale Med. School.*

10:15 **1797.** Streptomycin tolerant bone marrow cells. DON METZGAR* AND MERWIN MOSKOWITZ. *Purdue Univ.* (Immunol.)

10:30 **1798.** Amino acid requirements of primary trypsinized Rhesus monkey testicular cells in tissue culture. ALFRED A. TYTELL, YVONNE RADER* AND DAVID L. KRUMM.* *Merck Sharp & Dohme Research Labs.* (Biochem.)

10:45 **1799.** Protein turnover in human cell cultures. KARL A. PIEZ* AND HARRY EAGLE. *Natl. Insts. of Health.* (Biochem.)

11:00 **1800.** Effect of oxygen tension on growth and metabolism of mammalian cells cultivated in vitro. RONALD W. BROSEMER AND WILLIAM J. RUTTER (intr. by W. C. ROSE). *Univ. of Illinois.* (Biochem.)

11:15 **1801.** Pox virus inclusions in vitro and in vivo. SHIRO KATO* AND WINDSOR C. CUTTING. *Stanford Univ.* (Pharmacol.)

Cartilage and Connective Tissue

TUES. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: Richard H. Follis, Jr.

9:00 **1802.** Spreading factor in endometrial secretions of mice. FREDDY HOMBURGER AND PETER HARPEL.* *Bio-Research Inst.*

9:15 **1803.** Ultrastructure of rat epiphyseal cartilage. A. J. TOUSIMIS* AND RICHARD H. FOLLIS, JR. *Armed Forces Inst. of Pathology.*

9:30 **1804.** Use of aminoacetonitrile in the study of connective tissue formation and removal. JACKSON J. CLEMMONS. *Western Reserve Univ.*

9:45 **1805.** Demonstration of a urinary metabolite of beta-aminopropionitrile (BAPN). JOSEPH J. LALICH. *Univ. of Wisconsin.*

10:00 **1806.** Morphologic and chemical studies on lathyrism in the chick embryo. C. I. LEVENE (intr. by E. TAFT). *Massachusetts Gen. Hosp. and Harvard Med. School.*

10:15 **1807.** Chemical structure of rat epiphyseal cartilage. RICHARD H. FOLLIS, JR. AND A. J. TOUSIMIS.* *Armed Forces Inst. of Pathology.*

10:30 **1808.** Biochemical aspects of the papain induced changes in cartilage. THEODORE T. TSALTAS (intr. by LEWIS THOMAS). *New York Univ. College of Medicine.*

10:45 **1809.** Fractional analysis of experimental wound fluid. BETTY N. WHITE,* M. R. SHETLAR* AND JOHN A. SCHILLING. *Univ. of Oklahoma School of Medicine.*

11:00 **1810.** Shrinkage of collagen in vivo:

a possible mechanism for contraction of connective tissue. G. MAJNO, H. H. BARTEN* AND C. W. BERARD.* *Harvard Med. School.*

11:15 **1811.** Lack of antigenicity in elastin isolated with formic acid. JOHN P. AYER AND LAILA FELDMANIS (intr. by SHIELDS WARREN). *New England Deaconess Hosp., Boston.*

Arteriosclerosis, Pathology and General

TUESDAY, 9:00 A.M.—IRVINE AUDITORIUM

See Intersociety Sessions for details

Lost and Found

Federation Office, Room 305, Convention Hall

Open House by Laboratories

See page 672 for complete schedule

Films of Interest to Pathologists

See page 644 for schedule

Tuesday Afternoon, April 15, 1:30 p.m.

Liver

TUES. P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: W. Stanley Hartroft

1:30 **1812.** Production of "pseudo cancer de novo" in livers of choline-deficient treated mice. W. STANLEY HARTROFT AND ROBERT C. AHLVIN.* *Washington Univ. School of Medicine.*

1:45 **1813.** Relation of splenic and lymph node changes to hypergammaglobulinemia in cirrhosis. G. KENT,* S. GLAGOV* AND H. POPPER. *Hektoen Inst. for Med. Research and Cook County Hosp., Chicago, and Mt. Sinai Hosp., New York City.*

2:00 **1814.** Histochemical reactions of intranuclear inclusions in hepatic cells of the mouse. ELIZABETH H. LEDUC (intr. by J. WALTER WILSON). *Brown Univ.*

2:15 **1815.** Structure of "fatty cysts". B. LOMBARDI (intr. by J. D. HAMILTON). *Univ. of Toronto, Canada.*

2:30 **1816.** Incorporation of amino acids into liver proteins of normal and turpentine-injured rats. DEAN L. MOYER,* S. D. FRASIER,* L. J. ZELDIS AND S. C. MADDEN. *Univ. of California School of Medicine.*

2:45 **1817.** Hepatocellular pathology following various chlorinated hydrocarbon insecticides. PAUL ORTEGA. *VA Hosp., Los Angeles.*

3:00 **1818.** Liver regeneration. Effect of partial hepatectomy on hepatic uptake of colloidal radiogold in rat. KURT STERN AND ARLENE DUWELIUS.* *Mt. Sinai Med. Research Fndn., Mt. Sinai Hosp., Chicago, and Chicago Med. School.*

3:15 **1819.** Enzymatic histochemistry of the ethionine-induced liver cirrhosis and hepatoma. MAX WACHSTEIN AND ELIZABETH MEISEL.* *St. Catherine's Hosp., Brooklyn.*

3:30 **1820.** Nature of dietary fat and pattern of hepatic liposis in choline-deficient mice. W. LANE WILLIAMS, JOHN B. CARDLE* AND ROLAND D. MEADER.* *Univ. of Minnesota.*

3:45 **1821.** Role of cholangioles in a dietary injury and repair of the liver of the mouse. J. WALTER WILSON AND ELIZABETH H. LEDUC.* *Brown Univ.*

4:00 **1822.** Liver function in the regenerating rat liver. $CrPO_4$ colloid uptake and bile flow. GEORGE F. LEONG,* RITA L. PESSOTTI* AND RALPH W. BRAUER. *U. S. Naval Radiological Defense Lab.* (Pharmacol.)

Electron Microscopy. Pancreas. Endocrines

TUES. P. M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: Jacob Furth

1:30 **1823.** Electron microscopy of human malignant melanoma. S. R. WELLINGS AND BENJAMIN V. SIEGEL (intr. by HENRY D. MOON). *Univ. of California Med. School.*

1:45 **1824.** Alveolar membrane of bat lung. W. H. CHASE (intr. by I. GERSH). *Univ. of Chicago.*

2:00 **1825.** Electron microscopy of early effects of alloxan on the pancreas of the rat. PAUL E. LACY AND A. F. CARDEZA.* *Washington Univ.*

2:15 **1826.** Electron microscopy of early effects of alloxan on the pancreas of rabbits. JOE R. WILLIAMSON* AND PAUL E. LACY. *Washington Univ.*

2:30 **1827.** Rabbit pancreas in glucagon diabetes. SYDNEY S. LAZARUS* AND BRUNO W. VOLK. *Jewish Chronic Disease Hosp., Brooklyn.*

2:45 **1828.** Pancreatin and aureomycin therapy of rats with pancreatic duct ligation. O. J. POLLAK. *Kent Gen. Hosp., Dover, Del.*

3:00 **1829.** Bioassays of fifty human hypophyses correlated with structure and clinical history. AGNES B. RUSSFIELD. *Massachusetts Gen. Hosp. and Harvard Med. School.*

3:15 **1830.** Effect of progressive removal of the brain on the adrenal cortical hypersecretion due to operative trauma. RICHARD H. EGDAHL, JIMMY L. STOREY* AND JAMES C. MELBY.* *Univ. of Minnesota.*

3:30 **1831.** Effects of tetrazolium salts on pseudocholinesterase. GEORGE H. FRIED AND WILLIAM ANTOPOL. *Beth Israel Hosp., New York City.*

3:45 **1832.** Histochemical studies on esterases by 5-bromoindoxyl acetate under various conditions. BJARNE PEARSON AND FRED GROSE.* *Detroit Inst. of Cancer Research and Wayne State Univ. College of Medicine.*

Pathology Society Business Meeting

TUESDAY, 5:00 P.M.—CONVENTION HALL, ROOM 200

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

See program on page 544

FILMS OF INTEREST TO PATHOLOGISTS

TUES. 12:45 P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Films from *Living Human Cells in Culture Series*

1. Microglia. Produced 1956. C. M. POMERAT. *Univ. of Texas.*
2. Oligodendroglia. Produced 1956. C. M. POMERAT, CHARLES LUMSDEN, CURTIS HASKINS AND C. GEORGE LEFEBER. *Univ. of Texas.*
3. Normal Astrocytes. Produced 1957. I. COSTERO, R. BARROSO-MOGUEL AND C. M. POMERAT. *Univ. of Texas.*

Sponsor: Abbott Labs., North Chicago. *Producer:* Med. Audio-Visual Inst., Assn. of Amer. Med. Colleges, with Wynne S. Eastman.

WED., 12:45 P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

1. Embryology and Pathology of the Intestinal Tract. Produced 1953. LAWRENCE CHAFFIN, WILLIAM H. SNYDER. *Univ. of Southern California.* Producer: LESTER NOVROS, Graphic Films Corp., Hollywood.
2. Vitamin Deficiencies in Pregnancy. Produced 1957 (U.S.A.). Scientific Collaborators: H. DE WATTEVILLE (Geneva), RUDOLPH JURGENS (Basle), HILDE PFALTZ (Basle). Producer: NORMAN P. SCHENKER. Sponsor: F. HOFFMANN LaROCHE & CO., LTD.

THURS., 12:45 P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

1. Death of a Cell. Produced 1957 (U.S.A.). Author: MARCEL BESSIS. (Distrib. in U.S. by Squibb Med. Film Library, New York.)
2. Normal and Pathological Red Cells of Human Blood. Produced 1956 (U.S.A.). MARCEL BESSIS. (Distrib. in U.S. by International Society of Hematology, Baylor Univ. Hosp., Dallas.)

Produced at Natl. Blood Transfusion Ctr., Paris, France, by Dr. Marcel Bessis.

Wednesday Morning, April 16, 9:00 a.m.

Cardiovascular Pathology

WED. A.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: Robert H. More

9:00 **1833.** Thromboelastographic studies of streptokinase-induced fibrinolysis and effects of various fats. ROBERT M. O'NEAL AND ROOSEVELT L. TILLMAN.* *Washington Univ. School of Medicine.*

9:15 **1834.** Effect of parathyroidectomy on experimental vascular necrosis. A. A. LIKE* AND J. L. ORBISON. *Univ. of Rochester School of Medicine.*

9:30 **1835.** New functional aspects of smooth muscle cells. M. DARIA HAUST* AND ROBERT H. MORE. *Queen's Univ., Canada.*

9:45 **1836.** An electron microscopic study of ischemic myocardium in the rat. RICHARD E. BRYANT* AND W. A. THOMAS. *Washington Univ. School of Medicine.*

10:00 **1837.** Comparison of ATPASE activity of isolated human cardiac and skeletal myofibrils. ARNOLD L. BROWN, ALBERT ARAS* AND GEORGE M. HASS. *Presbyterian-St. Luke's Hosp., Chicago.*

10:15 **1838.** Coronary flow related to cardiac conduction. GEORGE D. LUMB, R. S. SHACKLETT AND W. A. DAWKINS (intr. by D. H. SPRUNT). *Univ. of Tennessee.*

10:30 **1839.** Hypersensitivity changes in coronary arteries of rabbits and their relationship to arteriosclerosis. OTTO SAPHIR, DORA STRYZAK* AND LEONARD OHRINGER.* *Michael Reese Hosp.*

10:45 **1840.** Early development of cardiac and renal lesions of potassium deficiency without alkalosis. B. H. SPARGO AND FRANCIS STRAUS.* *Univ. of Chicago.*

11:00 **1841.** Hypersensitivity myocarditis in rabbits and swine. PETER W. VANACE,* JOHM MCGRATH* AND BERNARD M. WAGNER. *Children's Hosp. of Philadelphia and Veterinary School of Medicine, Univ. of Pennsylvania.*

Injury I: Virus and Endotoxins

WED. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: Frederick B. Bang

9:00 **1842.** Behavior of drug-resistant psittacosis virus in chick embryo entodermal cell cultures. E. WEISS* AND F. B. GORDON. *Naval Med. Research Inst.*

9:15 **1843.** Susceptibility of cortisone treated mice to mouse hepatitis virus. THEODORE J. STARR* AND MORRIS POLLARD. *Univ. of Texas Med. Branch.*

9:30 **1844.** Chemical changes induced in HeLa cells by virus infection. CHARLES C. RANDALL AND DOROTHY J. MOORE.* *Univ. of Mississippi School of Medicine.*

9:45 **1845.** Agglutination of human platelets by influenza (PR8 strain) virus and mumps virus. WAN CHING LU (intr. by GEORGE E. FOLEY). *Children's Cancer Research Fndn. and Harvard Med. School.*

10:00 **1846.** Propagation of measles virus in suckling mice. DAVID T. IMAGAWA AND JOHN M. ADAMS. *School of Medicine, Univ. of California, and Long Beach VA Hosp.*

10:15 **1847.** Effect of influenza and Newcastle viruses on respiratory epithelium in organ cultures of human and chicken trachea. F. B. BANG. *Johns Hopkins Univ. School of Hygiene and Public Health.*

10:30 **1848.** Inhibition of the ACTH-releasing property of C^{14} labeled bacterial polysaccharide by plasma incubation. RUSSELL S. JONES, YOLANDE C. MAYNE,* E. VIRGIL HOWELL* AND KRISTEN EIK-NES. *Univ. of Utah.*

10:45 **1849.** Effect of endotoxin on the blood brain barrier. P. ECKMAN,* W. KING* AND J. BRUNSON. *Univ. of Minnesota.*

11:00 **1850.** Twenty-four-hour periodicity in mortality of C mice from E. coli lipopolysaccharide. FRANZ HALBERG AND AUBREY N. STEPHENS (intr. by J. R. DAWSON, JR.). *Med. School, Univ. of Minnesota, and Cambridge State School and Hosp.*

11:15 **1851.** Effect of endotoxin (Landy) on urinary excretion of corticosteroids in guinea pigs. ELI NADEL, BOBBY YOUNG,* ARTHUR HILGAR* AND ADRIAN MANDEL.* *Natl. Insts. of Health, and Walter Reed Army Inst. of Research.*

Wednesday Afternoon, April 16, 1:30 p.m.

Kidney I: Experimental and Natural Renal Disease

WED. P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: William E. Ehrich

1:30 **1852.** Influence of endotoxin on response of rats to nephrotoxic serum. R. ARHELGER,* F. SMITH,* J. BRUNSON, R. A. GOOD AND R. VERNIER. *Univ. of Minnesota Med. School.*

1:45 **1853.** Experimental renal disease as observed by electron microscopy. CAROLYN F. PIEL, LUTHER DONG,* NAOMI WARDLOW,* GEORGE MARTNER* AND JOSEPH GOODMAN.* *Stanford Univ. School of Medicine and VA Hosp., Long Beach.*

2:00 **1854.** Mechanism of biphasic experimental glomerulonephritis produced in rabbits by avian sera. KURT LANGE, EUGENE J. WENK* AND JEROME NOBLE.* *New York Med. College.*

2:15 **1855.** Production of biphasic experimental glomerulonephritis by antibodies eluted from antigen-antibody complexes. JEROME NOBLE,* EUGENE J. WENK* AND KURT LANGE. *New York Med. College.*

2:30 **1856.** Conditioning factors enhancing the effect of nephrotoxic serum in rabbits. CONSTANTIN V. TEODORU, ABRAHAM SAIFER AND HARRY FRANKEL (intr. by BRUNO W. VOLK). *Jewish Chronic Disease Hosp., Brooklyn.*

2:45 **1857.** Renal glomerulosclerosis associated with cirrhosis of the liver: Cirrhotic glomerulosclerosis. J. M. B. BLOODWORTH, JR. AND SHELDON C. SOMMERS. *Ohio State Univ. and Massachusetts Mem. Hosps.*

3:00 **1858.** Diffuse glomerulosclerosis of unknown etiology in woodchucks. JOHN J. CHRISTIAN. *Johns Hopkins School of Hygiene and Public Health and Naval Med. Research Inst.*

3:15 **1859.** Polyuria, polydipsia and hydronephrosis in inbred strain of mice. E. SILVERSTEIN,* L. SOKOLOFF, O. MICKELSEN AND G. E. JAY, JR.* *Natl. Inst. of Arthritis and Metabolic Diseases.*

3:30 **1860.** Acid mucopolysaccharides in the Hurler syndrome. ANDREW E. LORINCZ (intr. by S. SCHILLER). *LaRabida-Univ. of Chicago Inst.* (Biochem.)

3:45 **1861.** Kidney autografts in the rat. PAUL NATHAN,* PHILIP WASSERMAN* AND BENJAMIN F. MILLER. *Jewish Hosp., Cincinnati, and College of Medicine, Univ. of Cincinnati.* (Biochem.)

Injury II: Modifications and Effects

WED. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: John M. Craig

1:30 **1862.** Evaluation of immunity-depressing effects of anti-inflammatory corticoids. J. K. FRENKEL. *Univ. of Kansas School of Medicine.*

1:45 **1863.** The thyroid in native resistance to tuberculosis. MAX B. LURIE, PETER ZAPPASODI,* RICHARD S. LEVI* AND ROBERT G. BLAKER.* *Univ. of Pennsylvania.*

2:00 **1864.** Biochemical studies of phosphatases in tuberculous lesions. ANNE M. BRISCOE* AND MARVIN KUSCHNER. *Columbia Univ., New York Univ. College of Medicine and Bellevue Hosp.*

2:15 **1865.** Effect of alloxan diabetes on the chemistry of acute inflammation. BERNARD K. FORSCHER AND HELENE C. CECIL. (intr. by VALY MENKIN). *Natl. Inst. of Dental Research.*

2:30 **1866.** A morphologic study of bacterial flora in 1505 vaginal secretions. W. M. BERTON (intr. by D. H. SPRUNT). *Univ. of Tennessee.*

2:45 **1867.** Changes in brain electrolyte concentrations associated with cerebral damage and edema. RAYMOND A. CLASEN,* PAULINE COOKE,* SYLVANUS TYLER* AND GEORGE M. HASS. *Presbyterian-St. Luke's Hosp., Chicago and Argonne Natl. Lab.*

3:00 **1868.** Late histologic changes in healing burns. J. RAYMOND HINSHAW. *Univ. of Rochester.*

3:15 **1869.** Pathogenesis of experimental frostbite. J. P. KULKA AND G. J. DAMMIN.* *Harvard Med. School.*

3:30 **1870.** Histochemical demonstration of fibrin in thrombi of the generalized Shwartzman phenomenon. DONALD MCKAY, DAVID GITLIN* AND JOHN CRAIG. *Harvard Med. School.*

3:45 **1871.** Site of action of staphylococcus toxin. ALAN P. THAL AND W. EGNER. *Univ. of Minnesota.*

Pathology Society Dinner

WEDNESDAY, 7:00 P.M.—BELLEVUE-STRATFORD, SOUTH GARDEN

Registration Desks

Convention Hall, Monday–Friday (8 A.M.–5 P.M.)
Headquarters Hotels, Sunday (9 A.M.–9 P.M.); Monday (5–9 P.M.)

Exhibits—Inspection Periods

Monday through Thursday: 9 A.M. to 5 P.M.
Friday: 9 A.M. to 1 P.M.

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Thursday Morning, April 17, 9:00 a.m.

Kidney II: Experimental Disease, Amyloid, etc.

THURS. A.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: J. Lowell Orbison

9:00 **1872.** Renal changes in rats exposed to abdominal radiation. S. GLAGOV AND B. H. SPARGO. *Univ. of Chicago.*

9:15 **1873.** Thyroparathyroidectomy in the renoprival hypertension of dogs. J. L. ORBISON, T. C. DOEGE* AND R. G. SOMMER.* *Univ. of Rochester School of Medicine.*

9:30 **1874.** Light and electron microscopic pathology of experimental aminonucleoside nephrosis: relation to nephrosis in man. ROBERT L. VERNIER, B. W. PAPERMASTER* AND R. A. GOOD. *Univ. of Minnesota.*

9:45 **1875.** Influence of sodium chloride and sodium bicarbonate on renal changes in potassium deficiency. H. KAUNITZ, C. A. SLANETZ,* R. E. JOHNSON* AND H. C. STOERK. *Columbia Univ. and Merck Inst.*

10:00 **1876.** Nature of amyloid. BERNARD M. WAGNER. *Children's Hosp. of Philadelphia and Univ. of Pennsylvania School of Medicine.*

10:15 **1877.** Experimental production of amyloid and cellular injury. VALY MENKIN. *Temple Univ. School of Medicine.*

10:30 **1878.** Immunochemical determinations of gamma globulin content of amyloid. EVAN CALKINS, A. S. COHEN AND DAVID GITLIN (intr. by BENJAMIN CASTLEMAN). *Massachusetts Gen. Hosp., Children's Hosp. and Harvard Med. School.*

10:45 **1879.** Immunohistochemical analysis of "fibrinoid" in human and experimental conditions. JACINTO J. VAZQUEZ (intr. by F. J. DIXON). *Univ. of Pittsburgh.*

11:00 **1880.** Histonuria in Boeck's sarcoidosis. DOLORES P. LAWLOR AND ELLIOTT F. OSSERMAN (intr. by ERNEST BOREK). *Francis Delafield Hosp. and Columbia Univ.* (Biochem.)

11:15 **1881.** Serum proteins and mucoproteins in experimental amyloidosis. H. R. CATCHPOLE, C. L. PIRANI* AND A. BESTETTI.* *Univ. of Illinois College of Medicine.* (Physiol.)

Injury III: Miscellaneous Agents and Effects

THURS. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Z

Chairman: J. F. A. McManus

9:00 **1882.** Influence of high altitude on pulmonary capillaries of guinea pigs as demonstrated with a new technic. ENRIQUE VALDIVIA AND WARD OLSON (intr. by D. M. ANGEVINE). *Univ. of Wisconsin.*

9:15 **1883.** Influence of dietary linoleic acid on histology of skin in premature infants. JOHN G. SINCLAIR,* EDWARD L. PRATT,* VIRGINIA HUNTER,* COLEMAN JACOBSON,* DORIS J. D. ADAM,* ARR NELL BOELSCHE,* MARY ELLEN HAGGARD,* HILDA F. WIESE* AND ARILD E. HANSEN. *Southwestern Med. School and Univ. of Texas School of Medicine.*

9:30 **1884.** Essential fatty acid sparing action of saturated medium chain length triglycerides. V. BABAYAN,* H. KAUNITZ, C. A. SLANETZ* AND R. E. JOHNSON.* *Columbia Univ. and E. F. Drew, Boonton, N. J.*

9:45 **1885.** Neutralization of snake venom by sodium hydroxide and activation of venom protease by sodium bicarbonate. V. B. PHILPOT, JR. *Univ. of Tennessee.*

10:00 **1886.** Mortality and ulcerovegetative intestinal lesions in rats from feeding naphthol yellow S (FD&C Yellow No. 1). ARTHUR A. NELSON AND O. GARTH FITZHUGH. *Food and Drug Admin.*

10:15 **1887.** Pathological changes induced by β,β'-iminodipropionitrile in the Rhesus monkey. W. J. BECKFIELD, G. KELLER,* E. M. GORE,* F. V. HADLEY,* R. TISLOW* AND J. SEIFTER.* *Wyeth Inst.*

10:30 **1888.** Specificity of thermal and radiation (BETA) "toxins" of the skin. SOL ROY ROSENTHAL, WILMA A. SPURRIER* AND H. TRAHAN.* *College of Medicine, Univ. of Illinois.* (Physiol.)

10:45 **1889.** Life span of thrombocytes and erythrocytes in normal calves and in calves with hypoplastic anemia. N. S. MIZUNO,* V. PERMAN,* F. W. BATES,* J. H. SAUTTER* AND M. O. SCHULTZE. *Univ. of Minnesota.* (Biochem.)

11:00 **1890.** Paper electrophoresis of some lipoproteins in pathologic conditions. M. SPIEGEL-ADOLF, H. W. BAIRD, III,* H. T. WYCIS* AND D. KOLLIAS.* *Temple Univ. School of Medicine.* (Biochem.)

Thursday Afternoon, April 17, 1:30 p.m.

Blood. Serum. Antibody

THURS. P.M.—COMMERCIAL MUSEUM BLDG., ROOM X

Chairman: I. Davidsohn

1:30 **1891.** Dietary protein and serum glycoproteins. HENRY E. WEIMER AND HISAKO NISHIHARA (intr. by E. L. NELSON). *Univ. of California Med. Ctr.*

1:45 **1892.** Oxidation of 5-hydroxytryptamine by human serum and its inhibition by iproniazid. GEORGE MARTIN,* NILS ERIKSEN* AND EARL P. BENDITT. *Univ. of Washington.*

2:00 **1893.** A factor in plasma and serum influencing platelet agglutination: Use of a macroscopic test. E. C. LEROY,* J. L. HAZLEHURST,* G. P. VENNART* AND K. M. BRINKHOUS. *Univ. of North Carolina.*

2:15 **1894.** Reconstituted human serum protein solution as a plasma expander. JAMES L. DENNIS AND THOMAS C. COCK (intr. by IRVINE MCQUARRIE). *Children's Hosp. of the East Bay, Oakland, Calif.*

2:30 **1895.** Disappearance of classical homologous tissue reactions following exchange transfusions of blood. RICHARD H. ANDRESEN, CLARENCE W. MONROE,* GEORGE M. HASS AND DOROTHY A. MADDEN.* *Presbyterian-St. Luke's Hosp., Chicago.*

2:45 **1896.** Eye lens injury induced by homologous antibody. DON C. WOOD AND LEO MASSI (intr. by R. S. JONES). *Fort Douglas VA Hosp. and Univ. of Utah College of Medicine.*

3:00 **1897.** Birefrigence in lymphocytic nuclei. EDNA H. TOMPKINS. *New England Deaconess Hosp.*

3:15 **1898.** In vitro organ specificity of intrinsic factor action. VICTOR HERBERT (intr. by H. M. ZIMMERMAN). *Montefiore Hosp., New York City.*

3:30 **1899.** Experimental hemolytic anemia in mice. ISRAEL DAVIDSOHN, YOO BOCK LEE* AND CHANGLING LEE.* *Mt. Sinai Hosp. and Chicago Med. School.*

3:45 **1900.** Relations between the architecture of the marrow circulation and function. THEODORE M. FLIEDNER (intr. by E. P. CRONKITE). *Brookhaven Natl. Lab. and Czerny-Hosp. for Radio-Therapy of Univ. of Heidelberg, Germany.* (Physiol.)

READ BY TITLE

1901. Increase of vascular resistance by a mucopolysaccharide with anticoagulant properties. ISAAC DJERASSI AND EDMUND KLEIN (intr. by SIDNEY FARBER). *Children's Cancer Research Fndn. and Harvard Med. School.*

AMERICAN INSTITUTE OF NUTRITION

Twenty-second Annual Meeting

Monday Afternoon, April 14, 1:30 p.m.

Minerals, Food Technology and General

MON. P.M.—CONVENTION HALL, ROOM 101

Chairman: R. W. Engel

1:30 **1902.** Phosphorus content of the electrophoretic components of chicken blood serum. R. E. CLEGG, ALFRED T. ERICSON* AND R. E. HEIN*. *Kansas State College.* (Biochem.)

1:45 **1903.** Relationship of aerobic phosphorylation to radiocalcium metabolism by liver in vitro. R. P. GEYER AND ETHEL BOWIE*. *Harvard Univ. School of Public Health.*

2:00 **1904.** High fat diet and magnesium deficiency. JOSEPH J. BARBORIAK (intr. by G. R. COWGILL). *Yale Univ.*

2:15 **1905.** Effect of phosphorus on magnesium requirement. B. L. O'DELL, E. R. MORRIS* AND W. O. REGAN*. *Univ. of Missouri.*

2:30 **1906.** Some factors influencing the response of the rat to desiccated thyroid feeding as measured by cesium, potassium and sodium metabolism. F. R. MRAZ (intr. by HOMER PATRICK). *Univ. of Tennessee AEC Agricultural Research Program.*

2:45 **1907.** Effect of diet on liver choline oxidase in hyperthyroid rats. R. E. BOLDT* AND C. A. ELVEHJEM. *Univ. of Wisconsin.*

3:00 **1908.** Effect of sulfaguanidine and meat meal on thyroid activity. C. J. ACKERMAN, N. O. PRICE AND J. R. ROONEY (intr. by R. W. ENGEL). *Virginia Polytechnic Inst.*

3:15 **1909.** Reaction of ethylene oxide with histidine, methionine and nicotinic acid. H. G. WINDMUELLER AND HOWARD BAKERMAN (intr. by OLAF MICKELSEN). *Virginia Polytechnic Inst. and Natl. Insts. of Health.* (Biochem.)

3:30 **1910.** Wholesomeness of a composite diet of frozen-stored gamma-irradiated foods fed to rats. MERRILL S. READ*, HERMAN F. KRAYBILL, WILLIAM S. WORTH* AND NORMAN F. WITT. *USA Med. Nutrition Lab. and Univ. of Colorado.*

3:45 **1911.** Effects of gamma radiation and heat on certain nutrients in ground beef. H. D. ALEXANDER* AND W. D. SALMON. *Alabama Polytechnic Inst.*

4:00 **1912.** Osteolathyrogenic-like action of some chemicals. WALDEMAR DASLER AND RUSSELL V. MILLISER*. *Chicago Med. School.*

4:15 **1913.** Blood sampling technique for white rats. SHIRLEY V. BRING* AND T. B. KEITH. *Univ. of Idaho.*

Vitamins (Thiamine, Vitamin B_6 and Ascorbic Acid) and Microbial Growth Factors

MON. P.M.—COMMERCIAL MUSEUM BLDG., ROOM

Chairman: R. R. WILLIAMS

1:30 **1914.** Effect of deficiencies of thiamine, riboflavin and pyridoxine on pyrocatechol amine content of rat organs. T. L. SOURKES, B. D. DRUJAN AND V. R. WOODFORD, JR. (intr. by R. A. CLEGHORN). *McGill Univ., Canada.* (Physiol.)

1:45 **1915.** Thiamine antagonists and α-ketonic acid oxidation in rat tissues. C. J. GUBLER. *Univ. of Wisconsin.*

2:00 **1916.** Pyridoxine deficiency in the aged. ELMA RANKE*, STANLEY TAUBER*, BRUNO RANKE*, ROBERT GOODHART* AND BACON F. CHOW. *Johns Hopkins Univ. School of Hygiene and Public Health, Home for the Jewish Aged and Natl. Vitamin Fndn.*

2:15 **1917.** Pyridoxine deficiency and serum transaminases. MYRON BRIN AND MARY TAI*. *Food and Drug Research Labs.*

2:30 **1918.** Some effects of INH-induced vitamin B_6 deficiency in pregnant rats. RUTH L. PIKE AND AVANELLE KIRKSEY*. *Pennsylvania State Univ.*

2:45 **1919.** Changes in blood volume and thiocyanate space in vitamin B_6-deficient and control pregnant and nonpregnant rats

MYRTLE L. BROWN* AND RUTH L. PIKE. *Pennsylvania State Univ.*

3:00 **1920.** Successful skin homografts in pyridoxine-deficient rats. A. E. AXELROD, B. FISHER* AND E. R. FISHER*. *Univ. of Pittsburgh School of Medicine.*

3:15 **1921.** Effect of vitamin deficiency on behavior in rats. W. HORSLEY GANTT, BACON CHOW* AND MARIA SIMONSON*. *Johns Hopkins Univ.* (Physiol.)

3:30 **1922.** Human blood levels of L-ascorbic acid or D-isoascorbic acid after oral dosage. HAROLD KADIN AND MODEST OSADCA (intr. by S. H. RUBIN). *Hoffmann-La Roche Inc.*

3:45 **1923.** Sex hormones and ascorbic acid. HELEN J. SOUDERS AND AILEEN VAROZZA (intr. by GLADYS J. EVERSON). *Univ. of California.*

4:00 **1924.** Microbiological determination of mevalonic acid. LEMUEL D. WRIGHT AND BIRENDRA N. DUTTA*. *Cornell Univ.*

4:15 **1925.** Riboflavin and thiamine requirements of Caenorhabditis briggsae (Nematoda). W. L. NICHOLAS*, EDER LINDSAY HANSEN AND ELLSWORTH C. DOUGHERTY*. *Kaiser Fndn. and Univ. of California School of Medicine.* (Pharmacol.)

Intersociety Sessions on Atherosclerosis

MONDAY, TUESDAY, THURSDAY, FRIDAY—IRVINE AUDITORIUM

See program of Intersociety Sessions

Open House by Laboratories

See page 672 for complete schedule

Films of Interest to Pathologists

See page 644 for schedule

Tuesday Morning, April 15, 9:00 a.m.

Vitamin B_{12}

TUES. A.M.—CONVENTION HALL, ROOM 101

Chairman: W. J. Darby

9:00 **1926.** Growth-promoting activity of vitamin B_{12} and a crystalline grasshopper pigment. L. E. BURGESS* AND D. T. ROLFE. *Meharry Med. College.* (Physiol.)

9:15 **1927.** Serum vitamin B_{12} concentrations determined by L. leichmannii assay in patients with neoplastic disease. I. BERNARD WEINSTEIN, ROBERT S. MENDELSOHN, HELEN F. NOBLE AND DONALD M. WATKIN (intr. by JOHN G. BIERI). *Natl. Cancer Inst.*

9:30 **1928.** Absorption and biologic activity of vitamin B_{12} analogues in patients with pernicious anemia. EDWARD H. REISNER, JR. *St. Luke's Hosp.*

9:45 **1929.** Fecal and urinary excretion of parenterally administered vitamin $B_{12}Co^{60}$. AMOS L. PREVATT* AND WALTER G. UNGLAUB. *Tulane Univ. School of Medicine.*

10:00 **1930.** Placental transfer of $Co^{60}B_{12}$ in the dog. A. LEONARD LUHBY*, JACK M. COOPERMAN AND ALVIN M. DONNENFELD*. *New York Med. College.*

10:15 **1931.** Hepatic storage and discharge of radioactive vitamin B_{12} in dogs. WALTER L. MERSHEIMER AND GEORGE B. JERZY GLASS (intr. by LINN J. BOYD). *New York Med. College.* (Pharmacol.)

10:30 **1932.** Storage of vitamin B_{12} in liver and kidney. LILLIAN N. ELLIS, BLENDENA J. DUNCAN* AND INA B. SNOW*. *Douglass College.*

10:45 **1933.** Effect of intrinsic factor on, and distribution of, vitamin B_{12}-receptor-proteins. O. NEAL MILLER AND FRED M. HUNTER*. *Tulane Univ. School of Medicine.*

11:00 **1934.** Effect of diet, ethanol and vitamin B_{12} on plasma proteins and liver constituents of rats. ELAINE P. RALLI, MARY E. DUMM* AND BERTRAM LAKEN*. *New York Univ. College of Medicine.*

11:15 **1935.** Effect of fat on vitamin B_{12}-sparing activity of methionine. M. R. SPIVEY FOX*, L. O. ORTIZ* AND G. M. BRIGGS. *Natl. Insts. of Health.*

11:30 **1936.** Vitamin B_{12} deficiency and methylation of nicotinamide. BRUNO RANKE*, ELMA RANKE* AND BACON F. CHOW. *Johns Hopkins Univ. School of Hygiene and Public Health.*

11:45 **1937.** Role of vitamin B_{12} in thymine biosynthesis by Lactobacillus leichmannii. JAMES S. DINNING, BARBARA ALLEN*, RUTH YOUNG* AND PAUL L. DAY. *Univ. of Arkansas School of Medicine.*

Fats and Energy Metabolism

TUES. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: J. B. Brown

9:00 **1938.** Volatile fatty acids in purified diets for ruminants. GENNARD MATRONE, H. A. RAMSEY* AND G. H. WISE. *North Carolina State College.*

9:15 **1939.** Nutritive behavior of acetostearin, a modified triglyceride. RICHARD DAVID COLEMAN*, ROSYLN B. ALFIN-SLATER, ROBERT L. ORY* AND REUBEN O. FEUGE*. *Univ. of Southern California and USDA Southern Utilization Research and Development Div.*

9:30 **1940.** Kinetics of unsaturated fatty acid deposition and depletion. S. B. TOVE AND F. H. SMITH (intr. by G. H. WISE). *North Carolina State College.*

9:45 **1941.** Influence of dietary linoleic acid on distribution of unsaturated fatty acids in serum of infants. HILDA F. WIESE, ARILD E. HANSEN, MARY ELLEN HAGGARD*, ARR NELL BOELSCHE* AND HELEN DAVIS*. *Univ. of Texas School of Medicine.*

10:00 **1942.** Utilization of intravenously administered fat emulsions in traumatized rats. STANLEY LEVEY AND L. W. MATTHEWS*. *Western Reserve Univ.* (Biochem.)

10:15 **1943.** Sparing effect of cottonseed oil and certain of its components on protein catabolism. LOTTE ARNRICH AND LILLIAN ANN VESELY*. *Iowa Agricultural Exper. Station.*

10:30 **1944.** Effect of diet on growth rates of the rat. C. H. LUSHBOUGH* AND B. S. SCHWEIGERT. *American Meat Inst. Fndn. and Univ. of Chicago.*

10:45 **1945.** Storage of steroid hormones by adipose tissue in two experimental obesities. CLAIRE E. ZOMZELY*, ROBERT ASTI* AND JEAN MAYER. *Harvard Univ. School of Public Health.*

11:00 **1946.** Effect of high versus low protein

equicaloric diets on the heat production of human subjects. R. W. SWIFT, G. P. BARRON*, K. H. FISHER*, C. E. FRENCH, E. W. HARTSOOK*, T. V. HERSHBERGER*, E. KECK*, T. A. LONG* AND N. D. MAGRUDER*. *Pennsylvania State Univ.*

11:15 **1947.** Metabolizable energy of fats and fatty acids for chickens. RUTH RENNER* AND F. W. HILL. *Cornell Univ.*

11:30 **1948.** Effect of methionine on energy utilization by the chick. L. B. CAREW, JR.* AND F. W. HILL. *Cornell Univ.*

Exhibits—Inspection Periods

Monday through Thursday: 9 A.M. to 5 P.M.
Friday: 9 A.M. to 1 P.M.

Placement Service

Center Building, Convention Hall

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Tuesday Afternoon, April 15, 1:30 p.m.

Carbohydrate Metabolism, Digestion and Antibiotics

TUES. P.M.—CONVENTION HALL, ROOM 101

Chairman: L. A. Maynard

1:30 **1949.** Lactose metabolism in the rat. R. M. TOMARELLI AND F. W. BERNHART*. *Wyeth Inst. for Med. Research.*

1:45 **1950.** Galactose metabolism in chicks. D. R. WILKEN AND J. H. NORDIN (intr. by H. M. SELL). *Univ. of Illinois and Michigan State Univ.* (Biochem.)

2:00 **1951.** Intravenous glucose tolerance, stock diets and the glucose tolerance factor. W. MERTZ AND K. SCHWARZ (intr. by E. L. HOVE). *Natl. Inst. of Arthritis and Metabolic Diseases.*

2:15 **1952.** Glycogenic potency of intermediates in the propanediol, acetol, lactaldehyde pathway. KENNETH H. SHULL* AND O. NEAL MILLER. *Tulane Univ. School of Medicine.*

2:30 **1953.** Interrelationships of glycogen and amylase in carbohydrate fed rats. B. W. SMITH (intr. by J. H. ROE). *George Washington Univ.*

2:45 **1954.** Influence of amylases on growth of chicks and poults. F. D. WHARTON, JR.*, L. J. CLASSEN* AND J. C. FRITZ. *Dawe's Labs.*

3:00 **1955.** Effect of dosage schedule on the efficiency of pancreatic substitution therapy in pancreatic steatorrhea. P. H. JORDAN, JR. AND M. I. GROSSMAN (intr. by A. L. S. CHENG). *Wadsworth VA Hosp. and Univ. of California Med. Ctr.*

3:15 **1956.** Effect of penicillin on the intestinal synthesis of thiamine in the rat. M. S. MAMEESH* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

3:30 **1957.** Difference in growth response of chicks and turkeys to different antibiotics. JAMES MCGINNIS AND L. S. JENSEN*. *State College of Washington.*

3:45 **1958.** Microflora of pendulous crop in turkeys. W. P. CRAWFORD*, H. O. WHEELER*, B. L. REID*, T. M. FERGUSON*, R. H. RIGDON* AND J. R. COUCH. *Texas Agricultural Exper. Station.*

Amino Acids

TUES. P.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: E. W. McHenry

1:30 **1959.** The sequence in which amino acids become deficient in casein and its bearing on amino acid imbalance. A. E. HARPER. *Univ. of Wisconsin.*

1:45 **1960.** Effect of dietary carbohydrate and fat on utilization of essential amino acids in rats. E. GEIGER and M. NIMNI*. *Univ. of Southern California.*

2:00 **1961.** Amino acid mixture as dietary source of nitrogen for rat growth. P. B. RAMA RAO* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

2:15 **1962.** Growth promoting effect of phosphates in rats fed synthetic amino acids as sole source of nitrogen. L. A. BAVETTA AND B. H. ERSHOFF. *Univ. of Southern California.*

2:30 **1963.** Effect of dietary carbohydrate and aureomycin on urinary excretion of phenols in tyrosine-fed rats. F. W. BERNHART (intr. by R. M. TOMARELLI). *Wyeth Inst. for Med. Research.*

2:45 **1964.** Comparative effects of DL-methionine and its hydroxy analogue in rat nutrition. T. W. SULLIVAN*, H. R. BIRD AND C. A. BAUMANN. *Univ. of Wisconsin.*

3:00 **1965.** Utilization of DL-methionine-2-C^{14} by the adult rat. CECILE H. EDWARDS, EVELYN GADSDEN, WALTER WRIGHT AND GERALD A. EDWARDS (intr. by PEARL SWANSON). *Agric. and Tech. College of North Carolina.*

3:15 **1966.** Utilization of D-leucine for growth of rats and the effect of norleucine thereon. M. RECHCIGL, JR.*, J. K. LOOSLI AND H. H. WILLIAMS. *Cornell Univ.*

3:30 **1967.** Some physiologic effects of L-lysine and 19-nortestosterone during protein repletion of old male rats. SAMUEL M. GREENBERG, DORSEY E. HOLTKAMP* AND DORIS B. HUNTSMAN*. *Smith, Kline and French Labs.*

3:45 **1968.** Free amino acids in swine plasma. LUTHER R. RICHARDSON, SANFORD J. RITCHEY*, CARL M. LYMAN AND PATRICIA W. LAUDERDALE*. *Texas Agricul. Exper. Station.*

4:00 **1969.** Threonine and lysine requirements of chinook salmon. JOHN E. HALVER*,

DONALD C. DE LONG* AND EDWIN T. MERTZ. *US Fish and Wildlife Service Salmon Nutr. Lab. and Purdue Univ.*

4:15 **1970.** Effect of time of hydrolysis on apparent glycine activity as estimated by microbiological assay. JEAN S. O'BARR* AND CHARLES A. DENTON. *USDA Agricul. Research Service.*

Nutrition Society Business Meeting

TUESDAY, 4:30 P.M.—CONVENTION HALL, ROOM 101

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

See program on page 544

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Visible Index and Message Center

Consult the visible index of registrants to locate your friends—Convention Hall, off the Main Lobby

Press Room

Room 304, Convention Hall

Wednesday Morning, April 16, 9:00 a.m.

Vitamins: Choline, Riboflavin, Folic Acid, Niacin and Vitamin K

WED. A.M.—MUSEUM AUDITORIUM

Chairman: C. A. Elvehjem

9:00 **1971.** Certain flavonoids as possible substitutes for choline and other "methyl-donator" vitamins. R. E. LEE, N. O. BORHANI* AND M. E. O'BRIEN. *New York Hosp.* (Physiol.)

9:15 **1972.** Ethanolamine and its N-methyl derivatives in rats receiving 2-amino-2-methyl-1-propanol. CHARLOTTE E. OUTLEND*, EDWARD H. MEALEY*, WILLIAM J. LONGMORE* AND DWIGHT J. MULFORD. *Univ. of Kansas.* (Biochem.)

9:30 **1973.** Kwashiorkor type of fatty liver in primates. GEORGE F. WILGRAM*, C. H. BEST AND W. J. R. TAYLOR*. *Univ. of Toronto, Canada.* (Physiol.)

9:45 **1974.** Influence of sleep, work, diuresis and heat on excretion of riboflavin in man. ROBERT G. TUCKER*, ANCEL KEYS* AND OLAF MICKELSEN. *Univ. of Minnesota.*

10:00 **1975.** Riboflavin deficiency in the rhesus monkey. LOUIS D. GREENBERG AND HENRY D. MOON. *Univ. of California School of Medicine.* (Biochem.)

10:15 **1976.** Folacin and ascorbic acid interrelationship in the monkey: clinical and hematologic aspects. C. W. WOODRUFF, J. E. DUTRA DE OLIVIERA*, K. P. MISRA* AND W. J. DARBY. *Vanderbilt Univ. School of Medicine.*

10:30 **1977.** Folic acid and energy intake on nucleic acid synthesis in vivo. RANJAN MEHTA*, D. A. VAUGHAN*, S. R. WAGLE* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

10:45 **1978.** Effect of dietary factors on folic acid deficiency in the mouse. G. M. BRIGGS, D. J. INGLE* AND V. H. HAAS*. *Natl. Insts. of Health.*

11:00 **1979.** Alkali-treated corn and niacin deficiency. E. G. MCDANIEL* AND J. M. HUNDLEY. *Natl. Insts. of Health.*

11:15 **1980.** Comparative study of "normal" metabolism of niacin and its turnover rate in rat and sheep. M. L. WU CHANG* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

11:30 **1981.** Some effects of 6-aminonicotinamide in chick embryos. C. P. DAGG* AND DAVID A. KARNOFSKY. *Sloan-Kettering Inst. and Brown Univ.* (Pharmacol.)

11:45 **1982.** Uncomplicated vitamin K deficiency in the rat. RICHARD H. BARNES AND GRACE FIALA*. *Cornell Univ.*

Lost and Found

Federation Office, Room 305, Convention Hall

Wednesday Afternoon, April 16, 1:30 p.m.

SILVER ANNIVERSARY SYMPOSIUM

Where Are We Headed in Nutrition?

WED. P.M.—MUSEUM AUDITORIUM

Chairman: C. Glen King

1:30 **1983.** Introduction: Nutrition, a science and a profession. C. GLEN KING, *Columbia Univ. and The Nutrition Fndn.*

1:35 **1984.** Values in the American Institute of Nutrition: background and foreground. ROBERT R. WILLIAMS. *Research Corp.*

1:50 **1985.** Discussion opened by W. HENRY SEBRELL. *Columbia Univ.*

2:00 **1986.** The biochemist in nutrition. CONRAD A. ELVEHJEM. *Univ. of Wisconsin.*

2:20 **1987.** Discussion by A. L. LEHNINGER. *Johns Hopkins Univ.*

2:25 **1988.** Nutrition in medicine. GRACE A. GOLDSMITH. *Tulane Univ.*

2:45 **1989.** Discussion by PAUL GYÖRGY. *Univ. of Pennsylvania.*

2:50 **1990.** Nutrition and Public Health. FLOYD S. DAFT. *Natl. Insts. of Health.*

3:10 **1991.** Discussion by FREDERICK J. STARE. *Harvard Univ.*

3:15 Recess.

3:25 **1992.** Role of the dietitian and home economist. ELIZABETH NEIGE TODHUNTER. *Univ. of Alabama.*

3:45 **1993.** Discussion by HAZEL HAUCK. *Cornell Univ.*

3:50 **1994.** Nutrition and food processing. HERBERT E. ROBINSON. *Swift & Co.*

4:10 **1995.** Discussion by WILLIAM J. DARBY AND WENDELL H. GRIFFITH. *Vanderbilt Univ. and Univ. of California at Los Angeles.*

4:20 **1996.** Nutrition of food-source animals. DAMON CATRON. *Iowa State College.*

4:40 **1997.** Discussion. R. W. ENGEL. *Virginia Polytechnic Inst.*

American Institute of Nutrition Banquet

Presentation of Awards and Special Program in Celebration of 25th Anniversary of the Founding of the Society in 1933

WEDNESDAY, 6:30 P.M.—SHERATON HOTEL, PENNSYLVANIA BALLROOM

Biochemistry—Nutrition Smoker

WEDNESDAY, 9:30 P.M.—SHERATON, GRAND BALLROOM

Thursday Morning, April 17, 9:00 a.m.

Human Nutrition

THURS. A.M.—CONVENTION HALL, ROOM 101

Chairman: Paul György

9:00 **1998.** Magnesium metabolism of young women. RUTH M. LEVERTON, FLORENCE WADDILL* AND GEORGE ODELL*. *Oklahoma Agricul. Exper. Station.*

9:15 **1999.** Egg protein as a source of essential amino acids. MARIAN E. SWENDSEID, RUTH J. FEELEY*, CHERYL L. HARRIS* AND STEWART J. TUTTLE*. *Univ. of California and VA Ctr., Los Angeles.* (Biochem.)

9:30 **2000.** An attempt to estimate labile protein stores: lysine supplementation studies. GRACE A. GOLDSMITH, O. NEAL MILLER AND FRED M. HUNTER*. *Tulane Univ.*

9:45 **2001.** Rate of nitrogen storage in three adult male subjects. VINCENT FIORICA* AND F. R. STEGGERDA. *Univ. of Illinois.* (Physiol.)

10:00 **2002.** Nitrogen balances of human subjects fed free or bound methionine (wheat flour). DOROTHY L. STEEL*, LORRAINE T. MILLER*, C. A. BAUMANN AND MAY S. REYNOLDS. *Univ. of Wisconsin.*

10:15 **2003.** Influence of caloric intake on urinary nitrogen excretion in man. HELEN E. CLARK*, EDWIN T. MERTZ AND S. P. YANG*. *Purdue Univ.*

10:30 **2004.** Arginine requirement of the normal infant. SELMA E. SNYDERMAN, L. EMMETT HOLT, JR. AND AUDREY BOYER*. *New York Univ. College of Medicine.*

10:45 **2005.** Amino acid supplementation of corn masa. RICARDO BRESSANI*, MOISÉS BÉHAR*, NEVIN S. SCRIMSHAW AND FERNANDO VITERI*. *Inst. of Nutrition of Central America and Panama, Guatemala.*

11:00 **2006.** Relation of urinary creatinine and vitamins to nutritional status in preschool children. GUILLERMO ARROYAVE, HAROLD SANDSTEAD AND RALPH SCHUMACHER (intr. by R. L. SQUIBB). *Inst. of Nutrition of Central America and Panama, Guatemala.*

11:15 **2007.** Dietary effect on serum proteins as measured by paper electrophoresis. JENG M. HSU, JAMES A. MITCHELL AND SR. WILLIAM ANDREW (intr. by E. B. MCCOLLUM). *St. Joseph's Hosp.* and *Johns Hopkins Univ.*

11:30 **2008.** Heights and weights of college students and other adults in the United States. MILICENT L. HATHAWAY. *USDA Agricul. Research Service.*

11:45 **2009.** Rate of growth of the skeletal musculature in relation to total body growth during childhood. GENEVIEVE STEARNS. *Univ. of Iowa.*

Headquarters Hotels

Benjamin Franklin: Pharmacology and Physiology
Sheraton: Biochemistry and Nutrition
Bellevue-Stratford: Pathology and Immunology

Thursday Afternoon, April 17, 1:30 p.m.

Protein

THURS. P.M.—CONVENTION HALL, ROOM 101

Chairman: G. R. Cowgill

1:30 **2010.** Fate of radioactive casein in the digestive tract. E. S. NASSET AND JIN SOON JU*. *Univ. of Rochester.*

1:45 **2011.** Effect of dietary protein levels on the susceptibility of chicks to fowl typhoid. C. H. HILL AND H. W. GARREN (intr. by G. HOWARD SATTERFIELD). *North Carolina State College.*

2:00 **2012.** Aspects of protein and ascorbic acid nutrition of the guinea pig. M. P. LAMDEN*, A. B. ALMEIDA*, C. E. SCHWEIKER*, S. B. MERROW* AND H. B. PIERCE. *Univ. of Vermont.*

2:15 **2013.** Experimental formation and prevention of calcium citrate urinary calculi in the rat. ROBERT VAN BREEN, HARVEY W. LYON* AND FRED L. LOSEE*. *Naval Med. Research Inst.*

2:30 **2014.** Chemical characteristics and biological significance of gossypol protein complexes. CARL M. LYMAN AND B. P. BALIGA*. *Texas A and M College.*

2:45 **2015.** Protein efficiency determination. J. B. ALLISON AND R. W. WANNEMACHER, JR.*. *Rutgers Univ.*

3:00 **2016.** Influence of additions of B_{12} and small amounts of defatted fish flour to proteins in enriched milled wheat flour on growth and protein efficiency. MARINUS C. KIK AND BARNETT SURE. *Univ. of Arkansas.*

3:15 **2017.** Effect of ACTH on nitrogen balance in dogs. A. L. KRETCHMAR* AND G. C. KYKER. *Oak Ridge Inst. of Nuclear Studies.* (Biochem.)

3:30 **2018.** Synthesis of liver phospholipid and ribonucleic acid in rats on corn rations. S. A. SINGAL, PATRICIA MATTHEWS* AND JULIA M. LITTLEJOHN*. *Med. College of Georgia.* (Biochem.)

3:45 **2019.** Effect of dietary protein level on several oxidative enzymes of the heart, muscle and liver of cattle. R. L. SHIRLEY, E. BEDRAK*, J. F. EASLEY*, A. C. WARNICK*, J. F. HENTGES* AND G. K. DAVIS. *Univ. of Florida.*

4:00 **2020.** Composition of serum proteins of experimentally over-fed sheep. J. GOLDSTEIN, A. L. NEAL AND H. E. BOND (intr. by H. H. WILLIAMS). *Cornell Univ.* (Biochem.)

Nutrition Society Business Meeting

THURSDAY, 4:30 P.M.—CONVENTION HALL, ROOM 101

Federation Office

Room 305, Convention Hall
Rooms 216–217, Bellevue-Stratford Hotel

Friday Morning, April 18, 9:00 a.m.

Vitamins A and E

FRI. A.M.—COMMERCIAL MUSEUM BLDG., ROOM Y

Chairman: E. L. Hove

9:00 **2021.** Distribution studies with tritium-labeled vitamin A. H. W. SCHARPENSEEL AND GEORGE WOLF (intr. by R. M. FORBES). *Univ. of Illinois.*

9:15 **2022.** Biochemistry of night blindness. GEORGE WALD AND JOHN DOWLING*. *Harvard Univ.* (Biochem.)

9:30 **2023.** Isomerization of vitamin A in vivo. T. K. MURRAY* AND J. A. CAMPBELL. *Dept. of Natl. Health and Welfare, Canada.*

9:45 **2024.** An effect of dietary antibiotics on plasma vitamin A. J. D. JONES* AND C. A. BAUMANN. *Univ. of Wisconsin.* (Biochem.)

10:00 **2025.** Effect of methylene blue on mouse "paralysis" and heart failure. CHIUNG P. LEE* AND JOSEPH T. KING. *Univ. of Minnesota.* (Physiol.)

10:15 **2026.** Fatty acid "peroxide" formation in tissues of muscular dystrophic mice. NOME BAKER, ALICE BLOOM* AND WILLIAM H. BLAHD*. *VA Ctr., Los Angeles, and Univ. of California Med. Ctr.* (Biochem.)

10:30 **2027.** Factor 3 potencies of selenium compounds. K. SCHWARZ AND C. M. FOLTZ (intr. by G. M. BRIGGS). *Natl. Inst. of Arthritis and Metabolic Diseases.*

10:45 **2028.** Effect of factors protective against dietary hepatic necrosis upon hepatic coenzyme A levels in the rat. CHING-SING YANG*, MARCIA RIEGL* AND ROBERT E. OLSON. *Univ. of Pittsburgh Grad. School of Public Health.*

11:00 **2029.** Growth response to vitamin E in chicks receiving a high-fat diet. STANLEY R. AMES AND WILLIAM J. SWANSON*. *Distillation Products Industries Div. of Eastman Kodak Co.* (Biochem.)

11:15 **2030.** Some factors in the production of encephalomalacia in the vitamin E deficient chick. B. CENTURY* AND M. K. HORWITT. *Elgin State Hosp.*

11:30 **2031.** Antagonism of vitamin E in the chick by the inorganic fraction of Torula yeast. J. G. BIERI, G. M. BRIGGS AND C. J. POLLARD*. *Natl. Insts. of Health.*

11:45 **2032.** Effect of antioxidants on muscle lipids of vitamin E-deficient guinea pigs. R. SHULL*, R. B. ALFIN-SLATER AND B. H. ERSHOFF. *Univ. of Southern California.*

Registration Desks

Convention Hall, Monday–Friday (8 A.M.–5 P.M.)
Headquarters Hotels, Sunday (9 A.M.–9 P.M.); Monday (5–9 P.M.)

Friday Afternoon, April 18, 1:30 p.m.

Trace Inorganic Elements

FRI. P.M.—CONVENTION HALL, ROOM 101

Chairman: G. F. Combs

1:30 **2033.** Effects of anaplasmosis upon the physiological behavior of chromium 51 and iron 59 in young calves. SAM L. HANSARD AND LON E. FOOTE*. *Louisiana State Univ.*

1:45 **2034.** Tissue copper relationships and copper status of cattle. J. R. HAAG AND F. W. ADAMS*. *Oregon State College.*

2:00 **2035.** Teratogenic aspects of manganese deficiency in rats. LUCILLE S. HURLEY*, GLADYS J. EVERSON AND JEAN F. GEIGER*. *Univ. of California.*

2:15 **2036.** Importance of manganese for normal embryonic development of guinea pigs. GLADYS J. EVERSON AND LUCILLE S. HURLEY*. *Univ. of California.*

2:30 **2037.** Effect of zinc and potassium on growth, bone formation and feathering of poults. W. C. SUPPLEE*, D. L. BLAMBERG* AND G. F. COMBS. *Univ. of Maryland.*

2:45 **2038.** Zinc requirement of the chick. T. R. ZEIGLER*, R. M. LEACH, JR.* AND L. C. NORRIS. *Cornell Univ.*

3:00 **2039.** Zinc deficiency in chicks. H. PATRICK. *West Virginia Univ.*

3:15 **2040.** Relationship of sulfate, copper and manganese to molybdenum in the diet of the chick. B. L. REID*, R. E. DAVIES* AND J. R. COUCH. *Texas Agricul. Exper. Station.* (Biochem.)

3:30 **2041.** Molybdenum-sulfate interrelationship in the growing chick. EDWARD C. MILLER*, PAUL B. PEARSON AND C. A. DENTON. *USDA Agricultural Research Service.*

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Forty-second Annual Meeting

Monday Afternoon, April 14, 1:30 p.m.

Tissue Culture

MON. P.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: J. S. Youngner

1:30 **2042.** Antigenic relationship of poliovirus-susceptible rabbit kidney cell cultures to HeLa and other primate cell lines. JOSEPH L. MELNICK AND KARL HABEL. *Natl. Insts. of Health.*

1:45 **2043.** A stable adult rabbit kidney cell line susceptible to poliovirus. FRANK J. MCCARTHY* AND ALFRED A. TYTELL. *Merck Sharp & Dohme Res. Labs.*

2:00 **2044.** Virus eclipse phase in susceptible and resistant cells. KARL HABEL AND KENNETH TAKEMOTO*. *Natl. Insts. of Health.*

2:15 **2045.** Nucleic acids of polio-infected HeLa cells. E. L. ROTHSTEIN, JOHN S. COLTER AND LIONEL A. MANSON (intr. by G. W. RAKE). *Univ. of Pennsylvania and Wistar Inst. of Anatomy and Biology.*

2:30 **2046.** Effect of Coxsackie B-3 virus infection on cathepsin and transaminase activities of mammalian cells in continuous culture. RICHARD L. CROWELL* AND JEROME T. SYVERTON. *Univ. of Minnesota.*

2:45 **2047.** Enzymatic synthesis of deoxyribonucleic acid (DNA) in extracts of mammalian cells. CARL G. HARFORD AND ARTHUR KORNBERG. *Washington Univ. School of Medicine.*

3:00 **2048.** Cell culture produced activator for serum proteolytic proenzyme and its presence in poliomyelitis vaccine. EUGENE V. BARNETT AND SAMUEL BARON (intr. by JOEL WARREN). *Natl. Insts. of Health.*

3:15 **2049.** A proteolytic enzyme produced by monkey kidney in tissue culture. ROBERT A. KRAMER (intr. by C. P. LI). *Natl. Insts. of Health.*

3:30 **2050.** Influence of extracellular environment on growth of rickettsiae in tissue cultures. HOPE E. HOPPS*, E. B. JACKSON, J. X. DANAUSKAS* AND J. E. SMADEL. *Natl. Insts. of Health.*

3:45 **2051.** Penetration of rickettsiae into mammalian cells. F. M. BOZEMAN, Z. A. COHN, J. M. CAMPBELL, J. W. HUMPHRIES AND T. K. SAWYER (intr. by H. S. FULLER). *Walter Reed Army Med. Ctr.*

Antigens and Antibodies

MON. P.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: M. W. Chase

1:30 **2052.** Fractionation and properties of an immunologically reactive DNA preparation. O. J. PLESCIA, J. NOVAL* AND WERNER BRAUN*. *Rutgers Univ.*

1:45 **2053.** Preparation of immunizing antigens from Cohn fraction VI by continuous curtain electrophoresis. DAVID S. RAMSEY* AND MORRIS GOODMAN. *Detroit Inst. of Cancer Research.*

2:00 **2054.** Antigenicity of human vascular endothelium. SERGIO A. PIOMELLI*, ROSE H. MELE* AND MARIO STEFANINI. *St. Elizabeth Hosp. and Tufts Univ.*

2:15 **2055.** Immunochemical and physicochemical properties of bovine serum albumin denatured by various agents. PAUL H. MAURER. *Univ. of Pittsburgh.*

2:30 **2056.** Nitro group as a determinant of immunologic specificity. ALFRED NISONOFF*, ANITA R. SHAW* AND DAVID PRESSMAN. *Roswell Park Mem. Inst.*

2:45 **2057.** Antigenic microheterogeneity of serum proteins. MORRIS GOODMAN, DAVID S. RAMSEY* AND EMILY POULIK*. *Detroit Inst. of Cancer Research.*

3:00 **2058.** Serological studies of deacetylated VI antigen. EDGAR E. BAKER AND ROBERTA WHITESIDE*. *Boston Univ. School of Medicine.*

3:15 **2059.** Secretion of serum proteins of

the bovine udder. FRANK J. DIXON, WILLIAM O. WEIGLE AND JACINTO J. VAZQUEZ*, *Univ. of Pittsburgh.*

3:30 **2060.** Transfer of lymph node cells to recipients pre-injected with donor leucocytes. SUSANNA HARRIS*, T. N. HARRIS AND MIRIAM B. FARBER*. *Children's Hosp. of Philadelphia and Univ. of Pennsylvania.*

3:45 **2061.** Tissue and cellular changes in the rat spleen during antibody formation. CARL H. GUNDERSON*, MARIANO F. LaVia*, DANUTE JURAS* AND ROBERT W. WISSLER. *AEC Argonne Cancer Research Hosp. and Univ. of Chicago.*

4:00 **2062.** Purification of bactericidin in rabbit serum active against Bacillus subtilis. Q. N. MYRVIK AND E. SOTO-FIGUEROA*. *Univ. of Virginia.*

Intersociety Sessions

See program, pages 545–559, for sessions on "Atherosclerosis", "Radiation", "Neuropharmacology", "Tumors" and "Blood Clotting"; symposia on "Neuropharmacology" and "Use of Animal and Plant Cells"

Open House by Laboratories

See page 672 for complete schedule

Films of Interest to Pathologists

See page 644 for schedule

Tuesday Morning, April 15, 9:00 a.m.

Enteroviruses I

TUES. A.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: W McD. Hammon

9:00 **2063.** Nutritional requirements for poliovirus synthesis in HeLa cells. J. E. DARNELL* AND H. EAGLE. *Natl. Insts. of Health.*

9:15 **2064.** Synthesis of ribonucleic acid in HeLa cells infected with poliovirus. PHILIP C. LOH*, FRANCIS E. PAYNE* AND W. WILBUR ACKERMANN. *Univ. of Michigan.*

9:30 **2065.** Behavior of type I poliovirus in ion exchange columns of modified cellulose. R. A. ORMSBEE AND B. H. HOYER (intr. by D. BLACKMAN). *Rocky Mountain Lab.*

9:45 **2066.** Experimental variation in mouse virulence of type III poliovirus. C. P. LI AND W. G. JAHNES*. *Natl. Insts. of Health.*

10:00 **2067.** Quantitative studies of complement fixation with poliovirus systems. JOHN D. HARE* AND JOEL WARREN. *Natl. Insts. of Health.*

10:15 **2068.** Complement-fixing antibodies in poliomyelitis. KLAUS HUMMELER AND V. V. HAMPARIAN (intr. by W. HENLE). *Univ. of Pennsylvania and Children's Hosp.*

10:30 **2069.** Duration of sero-immunity following poliomyelitis vaccination. GORDON C. BROWN. *Univ. of Michigan.*

10:45 **2070.** Neutralization of poliovirus. FRANCIS L. BLACK. *Yale Univ.*

11:00 **2071.** Antibody-combining capacity of poliovirus vaccines. MATILDA BENYESH* AND JOSEPH L. MELNICK. *Natl. Insts. of Health.*

11:15 **2072.** Effect of antiserum on poliovirus infection in rhesus monkeys. OSCAR C. LIU, JOSEPH E. CARTER*, BENJAMIN E. SANDERS* AND EDWARD V. C. SMITH*. *Merck Inst. for Therapeutic Research.*

Antigen-Antibody Reactions I

TUES. A.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: Sidney Raffel

9:00 **2073.** Formation by one antigen of multiple zones of precipitate in double gel diffusion: an immunological explanation. LEONHARD KORNGOLD AND GERDA VAN LEEUWEN*. *Sloan-Kettering Inst. for Cancer Research.*

9:15 **2074.** Analysis of thyroid antisera using gel-diffusion precipitation techniques. RICHARD S. METZGAR* AND NOEL R. ROSE. *Univ. of Buffalo.*

9:30 **2075.** "Negative precipitin" bands in antigen-antibody gel diffusion techniques. ARTHUR M. SILVERSTEIN, ROBERT FEINBERG AND MARTIN H. FLAX (intr. by E. L. BECKER). *Walter Reed Army Inst. of Research.*

9:45 **2076.** Starch gel immunoelectrophoresis. M. D. POULIK (intr. by MORRIS GOODMAN). *Child Research Ctr., Detroit.*

10:00 **2077.** Differences in antigenic components of sera of individual rabbits as shown by induced isoprecipitins. SHELDON DRAY AND GLENDOWLYN O. YOUNG (intr. by JULES FREUND). *Natl. Insts. of Health.*

10:15 **2078.** Components of chicken antiserum involved in the precipitin reaction. JAY B. BANOVITZ* AND HAROLD R. WOLFE. *Inst. for Cancer Research, Philadelphia, and Univ. of Wisconsin.*

10:30 **2079.** Serological and physical properties of associated and dissociated hemocyanin. ALLAN H. BARTEL (intr. by DAN H. CAMPBELL). *California Inst. of Technology.*

10:45 **2080.** Equilibria in inactivation of tobacco mosaic virus by rabbit antiserum. I. RAPPAPORT (intr. by DAN H. CAMPBELL). *Univ. of California.*

11:00 **2081.** Increase in permeability of guinea pig skin capillaries by soluble antigen-antibody complex. KIMISHIGE ISHIZAKA (intr. by DAN H. CAMPBELL). *California Inst. of Technology.*

11:15 **2082.** Avidity of circulating anti-BSA produced by rabbits. RICHARD STUDLEY FARR. *Univ. of Pittsburgh School of Medicine.*

Tuesday Afternoon, April 15, 1:30 p.m.

Enteroviruses II

TUES. P.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: J. F. Enders

1:30 **2083.** Antigenic heterogeneity of Coxsackie B viruses. R. WIGAND* AND A. B. SABIN. *Univ. of Cincinnati.*

1:45 **2084.** Alteration of patas monkey kidney cells susceptibility to Coxsackie A-9 virus infection by x-ray irradiation. G. D. HSIUNG (intr. by JOHN R. PAUL). *Yale Univ.*

2:00 **2085.** Factors determining mouse pathogenicity of ECHO 9 viruses. H. J. EGGERS* AND A. B. SABIN. *Univ. of Cincinnati.*

2:15 **2086.** Laboratory and epidemiological results of specimens submitted for poliomyelitis diagnosis. S. S. KALTER, M. PAGE* AND M. SUGGS*. *Communicable Disease Ctr., Chamblee, Ga.*

2:30 **2087.** Hemagglutinins associated with certain human enteric viruses. M. GOLDFIELD*, S. SRIHONGSE* AND J. P. FOX. *Tulane Univ.*

3:00 **2088.** Presidential address. JOHN H. DINGLE. *Western Reserve Univ.*

Immunology Society Business Meeting

TUESDAY, 3:45 P.M.—FOOD SERVICES BLDG., ROOM 404

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONVENTION HALL, MAIN AUDITORIUM

See program on page 544

Tickets

Tickets for group breakfasts, luncheons and dinners; Society dinners; Smoker; and other Federation functions will be on sale at the Federation Ticket Desk, Convention Hall, and in the Federation Office, Bellevue-Stratford Hotel

Wednesday Morning, April 16, 9:00 a.m.

Bacteria

WED. A.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: Hubert Bloch

9:00 **2089.** Fractionation of mycobacteria. EDGAR RIBI*, C. L. LARSON, R. H. LIST* AND W. C. WICHT*. *Rocky Mountain Lab.*

9:15 **2090.** Differentiation of an avirulent strain of Salmonella typhimurium from virulent strains by adapted monkey kidney cells and mouse macrophages. G. FURNESS (intr. by H. BLOCH). *Univ. of Pittsburgh.*

9:30 **2091.** Effect of Vi antigen on the virulence of a non-Vi variant of Salmonella typhosa. SIDNEY GAINES, JOSEPH G. TULLY* AND WILLIAM D. TIGERTT. *Walter Reed Army Inst. of Research.*

9:45 **2092.** Differences in the reactions of mice to Salmonella pathogenic and nonpathogenic for this host. JULIE GRABAR (intr. by MAURICE LANDY). *Pasteur Inst., Paris.*

10:00 **2093.** Infectious agents in infant diarrhea: hemagglutination and hemagglutination-inhibition tests against Shigellae or predominating coliform flora. VIOLA MAE YOUNG, M. R. SOCHARD AND J. J. HEMPHILL (intr. by L. H. MUSCHEL). *Walter Reed Army Inst. of Research.*

10:15 **2094.** A protein antigen in HCl extracts of group A, type 3 streptococci which is not the type-specific M-antigen. R. C. LANCEFIELD. *Rockefeller Inst.*

10:30 **2095.** Steady-state cultivation of hemolytic streptococci in an extended pH range. T. N. HARRIS, VICTOR F. IACOCCA*, CLIFTON A. OGBURN* AND FRED KARUSH. *Univ. of Pennsylvania, Children's Hosp. and Woman's Med. College.*

10:45 **2096.** Purification of a toxic cellular component of group A streptococci. JOHN H. SCHWAB AND WILLIAM J. CROMARTIE*. *Univ. of North Carolina.*

11:00 **2097.** Influence of triiodothyronike on the course of pneumococcosis and tuberculosis in mice. J. E. NUTTER*, C. L. GEMMILL* AND Q. N. MYRVIK. *Univ. of Virginia.*

11:15 **2098.** Inhibition of bacterial luminescence by antiluciferase. FREDERICK I. TSUJI AND DAVID L. DAVIS*. *Univ. of Pittsburgh.* (Biochem.)

11:30 **2099.** Effects of proteolytic enzymes on hemagglutination by enterobacterial antibodies. E. NETER, E. COHEN*, O. WESTPHAL* AND O. LUDERITZ*. *Roswell Park Inst., Children's Hosp., Univ. of Buffalo and Wander-Forschungsinstitut, Germany.*

Antigen-Antibody Reactions II

WED. A.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: A. G. Osler

9:00 **2100.** Cytotoxicity for HeLa cells of anti-human lung and anti-human foreskin rabbit sera. GERALD GOLDSTEIN* AND QUENTIN N. MYRVIK. *Univ. of Virginia.*

9:15 **2101.** Properties of the 1 and 2 antiplasmins of human plasma. PHILIP S. NORMAN (intr. by ROBERT R. WAGNER). *Johns Hopkins Univ.*

9:30 **2102.** Effect of treatment with formalin on the agglutination of red cells by antiserum homologous to artificially attached antigens. JOSEPH S. INGRAHAM (intr. by EDWARD W. SHRIGLEY). *Indiana Univ.*

9:45 **2103.** Serology of rabbit antisera to cornea and uvea. W. B. WACKER* AND M. C. DODD. *Ohio State Univ.*

10:00 **2104.** Neutralization of Rous Sarcoma virus (RSV) by homogenates of "Nonviral" tumors produced in turkeys by RSV. FRANK J. RAUSCHER* AND VINCENT GROUPÉ. *Rutgers Univ.*

10:15 **2105.** Release of histamine from rabbit platelets by means of antigen-antibody precipitates. J. F. BARBARO (intr. by E. L. BECKER). *Walter Reed Army Inst. of Research.*

10:30 **2106.** Tame esterase activity of guinea pig serum. F. K. AUSTENS*, E. L. BECKER, D. M. MARCUS* AND B. GOLDSMITH*. *Walter Reed Army Inst. of Research.*

10:45 **2107.** Simultaneous quantitation of uncombined antigen and soluble and precipitable antigen-antibody complexes by paper electrophoresis. S. A. BERSON, R. S. YALOW* AND K. NEWERLY*. *VA Hosp., Bronx.* (Physiol.)

11:00 **2108.** Characterization of antibodies isolated on specially prepared antigenic polymers. L. GYENES, B. ROSE AND A. H. SEHON (intr. by J. S. L. BROWNE). *Royal Victoria Hosp. and McGill Univ., Canada.* (Physiol.)

11:15 **2109.** Relation of eosinophils to formation of antibody. ROBERT S. SPEIRS. *State Univ. of New York.* (Physiol.)

11:30 **2110.** Isolation of an important immunologically active tuberculopolysaccharide. FLORENCE B. SEIBERT. *Univ. of Pennsylvania.* (Biochem.)

Wednesday Afternoon, April 16, 1:30 p.m.

Hypersensitivity

WED. P.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: H. N. Eisen

1:30 **2111.** Histologic comparison of experimental "auto-allergic" diseases. BYRON H. WAKSMAN AND RAYMOND D. ADAMS*. *Harvard Med. School and Massachusetts Gen. Hosp.*

1:45 **2112.** Acquired partial tolerance in mice to crystalline bovine serum albumin. G. TERRES AND W. L. HUGHES (intr. by R. M. DREW). *Brookhaven Natl. Lab.*

2:00 **2113.** Protracted anaphylactic shock after subcutaneous eliciting injection. SANFORD H. STONE. *Natl. Insts. of Health.*

2:15 **2114.** Endotoxin-like effects of old tuberculin. CHANDLER STETSON, JR., STUART SCHLOSSMAN* AND BARUJ BENACERRAF. *New York Univ. College of Medicine.*

2:30 **2115.** Inhibition of anaphylaxis by heterologous serum proteins. JACOB J. PRUZANSKY* AND SAMUEL M. FEINBERG. *Northwestern Univ.*

2:45 **2116.** Critical evaluation of conjunctival instillation test in allergy. MARY HEWITT LOVELESS. *Cornell Univ.*

3:00 **2117.** Sensitization of guinea pig ileum with ovalbumin or antiovalbumin by absorption in vitro. GEORGE A. FEIGEN AND CHRISTEN B. NIELSEN. *Stanford Univ.* (Physiol.)

3:15 **2118.** Nature of antibodies in ragweed-sensitive sera. J. GORDON, B. ROSE AND A. H. SEHON (intr. by F. C. MACINTOSH). *Royal Victoria Hosp. and McGill Univ., Canada* (Physiol.)

3:30 **2119.** Isolation and characterization of an allergen from ragweed pollen. M. RICHTER, B. ROSE AND A. H. SEHON (intr. by S. DWORKIN). *Royal Victoria Hosp. and McGill Univ. Canada* (Physiol.)

3:45 **2120.** Correlation between anaphylactic sensitivity in mice and rate of degradation of antigen. G. TERRES AND W. WOLINS (intr. by J. S. ROBERTSON). *Brookhaven Natl. Lab.* (Physiol.)

4:00 **2121.** Cutaneous reaction of soluble antigen-antibody complexes. C. G. COCHRANE* AND W. O. WEIGLE. *Univ. of Pittsburgh.*

Complement and Properdin

WED. P.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: E A. Kabat

1:30 **2122.** Third component of human complement C'3). FLORENCE ROTH ARDAY AND LOUIS PILLEMER[1] (intr. by IRWIN H. LEPOW). *Western Reserve Univ.*

1:45 **2123.** Nature of the first component of complement. ELMER L. BECKER. *Walter Reed Army Inst. of Research.*

2:00 **2124.** Preparation of an intermediate product of immune hemolysis with formaldehyde treated complement. HERBERT J. RAPP AND M. R. SIMS (intr. by M. M. MAYER). *Johns Hopkins Univ.*

2:15 **2125.** Inhibition of immune hemolysis by phlorizin. EUGENE RODRIGUEZ* AND ABRAHAM G. OSLER. *Johns Hopkins Univ.*

2:30 **2126.** The B-anti B isohemagglutination system and whole human complement. M. H. WILKIE (intr. by E. L. BECKER). *Walter Reed Army Inst. of Research.*

2:45 **2127.** Avidity and intercellular transfer of hemolysin. WILLIAM H. TALIAFERRO, LUCY GRAVES TALIAFERRO AND AIDA PIZZI*. *Univ. of Chicago.*

3:00 **2128.** Hydrazine-sensitive factor in the properdin system. JACK PENSDY, LEONA WURZ AND LOUIS PILLEMER[1] (intr. by IRWIN H. LEPOW). *Western Reserve Univ.*

3:15 **2129.** Purification and physicochemical characterization of properdin derived from human serum. EARL W. TODD AND LOUIS PILLEMER[1] (intr. by IRWIN H. LEPOW). *Western Reserve Univ.*

3:30 **2130.** Effect of streptokinase on properdin-complement system. MYRON A. LEON (intr. by J. W. BLUNT, JR.). *St. Luke's Hosp., Cleveland.* (Pathol.)

3:45 **2131.** Bovine conglutinin. A. B. TAYLOR AND MYRON A. LEON (intr. by J. W. BLUNT, JR.). *St. Luke's Hosp., Cleveland.* (Pathol.)

[1]Deceased.

Thursday Morning, April 17, 9:00 a.m.

Tissue Culture. Viruses: General

THURS. A.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: G. C. Brown

9:00 **2132.** Growth of Rous Sarcoma virus in hemorrhagic lesions. TIBOR BORSOS (intr. by F. B. BANG). *Johns Hopkins Univ.*

9:15 **2133.** Influence of temperature on virulence and growth of avian bronchitis virus in eggs. ROBERT W. SIMPSON* AND VINCENT GROUPÉ. *Rutgers Univ.*

9:30 **2134.** Internal antigen of bacteriophage T_{2r}+). LAWRENCE LEVINE, JAMES L. BARLOW* AND HELEN VAN VUNAKIS*. *Brandeis Univ.*

9:45 **2135.** Biological characteristics of plaque variants of vesicular exanthema virus. MARY E. MCCLAIN AND ADELINE J. HACKETT*. *Univ. of California.*

10:00 **2136.** Metabolism of radioiodine-labeled tobacco mosaic virus in mice. W. FRIEDBERG (intr. by E. P. REINEKE). *Michigan State Univ.* (Physiol.)

10:15 **2137.** Use of skim milk in cell culture maintenance media for virus studies. SAMUEL BARON, RICHARD J. LOW, ALICE M. GOCHENOUR AND ALAN S. RABSON (intr. by C. P. LI). *Natl. Insts. of Health.*

10:30 **2138.** Phacocytosis of HeLa cells of microorganisms. CHARLES C. SHEPARD. *U. S. Public Health Service, Montgomery, Ala.*

10:45 **2139.** Effects of cortisone and herpes simplex virus on HeLa cell metabolism. THELMA N. FISHER AND EARL FISHER, JR. (intr. by HAROLD BAER). *Charity Hosp. and Tulane Univ. School of Medicine.*

Blood Groups. Toxins-Antitoxins

THURS. A.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: D. W. Watson

9:00 **2140.** Action of Clostridium tertium enzymes on blood group A, B and O (H) substances and on type XIV pneumococcal polysaccharide. CALDERON HOWE, GERALD SCHIFFMAN*, ADA E. BEZER* AND ELVIN A. KABAT. *Columbia Univ.*

9:15 **2141.** Chromatography of dialyzates from blood group substances digested with Clostridium tertium enzymes. GERALD SCHIFFMAN*, CALDERON HOWE AND ELVIN A. KABAT. *Columbia Univ.*

9:30 **2142.** Immunogenic origin of anti-human blood-group agglutinins in "germ-free" chicks. GEORG F. SPRINGER, RICHARD E. HORTON* AND MARTIN FORBES*. *Univ. of Pennsylvania and Walter Reed Army Inst. of Research.*

9:45 **2143.** Blood-group active polysaccharide from sassafras albidum. PETER WILLIAMSON* AND GEORG F. SPRINGER. *Univ. of Pennsylvania.*

10:00 **2144.** Suppression of blood group agglutinability of human erythrocytes by certain bacterial polysaccharides. RUGGERO CEPPELLINI* AND MAURICE LANDY. *Columbia Univ. and Natl. Insts. of Health.*

10:15 **2145.** Human serum hemagglutinins. H. F. DEUTSCH AND P. C. Y. CHAN*. *Univ. of Wisconsin.* (Biochem.)

10:30 **2146.** Fate of I-131 diphtheria toxin in guinea pigs. S. P. MASOUREDIS. *Univ. of Pittsburgh School of Medicine.*

10:45 **2147.** Persistence of human diphtheria antitoxin in passive transfer sites. WILLIAM J. KUHNS. *Univ. of Pittsburgh School of Medicine.*

11:00 **2148.** Diphtheria and tetanus antitoxin levels determined by the hemagglutination test. JOSEPH H. SCHUBERT (intr. by IRVING G. KAGAN). *Communicable Disease Ctr., Atlanta.*

11:15 **2149.** Antigenic characteristics of equine antitoxin. FRANK L. ADLER. *Public Health Research Inst. of the City of New York.*

11:30 **2150.** Mast cells, heparin and toxic agents. R. D. HIGGINBOTHAM (intr. by CRICHTON MCNEIL). *Univ. of Utah.*

Thursday Afternoon, April 17, 1:30 p.m.

Viruses: General

THURS. P.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: H. M. Rose

1:30 **2151.** Inapparent human infection by Japanese encephalitis virus in Japan. W. F. SCHERER, M. KITAOKA*, T. OKUNO AND T. OGATA*. *Natl. Insts. of Health.*

1:45 **2152.** Hemagglutinin of eastern equine encephalitis virus in chick embryo tissue culture. JOAN B. DANIELS. *Harvard Med. School.*

2:00 **2153.** Adaptation of measles virus to suckling hamsters. THEODORE BURNSTEIN, JACK W. FRANKEL AND JOHN H. JENSEN (intr. by KINGSLEY M. STEVENS). *Merck Sharp and Dohme Research Labs.*

2:15 **2154.** Propagation of measles virus in tissue cultures of dog kidney cells. JACK W. FRANKEL, THEODORE BURNSTEIN AND MARGARET KING WEST (intr. by KINGSLEY M. STEVENS). *Merck Sharp and Dohme Research Labs.*

2:30 **2155.** Growth and antigenicity of measles virus in cells deriving from human heart. ANTHONY J. GIRARDI* AND JOEL WARREN. *Natl. Insts. of Health.*

2:45 **2156.** Electron microscopic study of cytopathic changes induced by measles virus. MAGDALENA REISSIG. *Yale Univ.*

3:00 **2157.** Demonstration of formaldehyde effect on viruses. B. H. HOYER, R. A. ORMSBEE, ELLIS BOLTON, AND D. B. RITTER (intr. by S. B. SALVIN). *Rocky Mountain Lab. and Carnegie Inst.*

3:15 **2158.** Effect of receptor-destroying enzyme on the growth of EMC virus in tissue culture. HELEN KODZA* AND CLAUS W. JUNGEBLUT. *Columbia Univ.*

3:30 **2159.** Vaccination of inbred strains of mice with vaccinia virus. B. A. BRIODY. *Hahnemann Med. College.*

3:45 **2160.** An inhibitor of vaccinia hemagglutinin appearing in Ehrlich ascites carcinoma plasma fluid. HAROLD L. WOLIN (intr. by B. A. BRIODY). *Hahnemann Med. College.*

Labeled Antigens and Antibodies. Miscellaneous

THURS. P.M.—FOOD SERVICES BLDG., ROOM 406

Chairman: David Pressman

1:30 **2161.** Inhibition of cross reactions in indirect fluorescent antibody staining with murine and epidemic typhus sera. ROBERT A. GOLDWASSER* AND CHARLES C. SHEPARD. *Communicable Disease Ctr., Montgomery, Ala.*

1:45 **2162.** Lupus globulin-neucleoprotein interaction measured with iodine-31 label. GEORGE J. FRIOU (intr. by R. H. GREEN). *VA Hosp., West Haven, and Yale Univ. School of Medicine.*

2:00 **2163.** Evidence for the in vivo persistence of an azo-linkage with its protein carrier. JUSTINE S. GARVEY AND DAN H. CAMPBELL. *California Inst. of Technology.*

2:15 **2164.** Persistence of protein antigens in tissues. DAVID GITLIN AND GEORGE N. ROGENTINE, JR. (intr. by THOMAS H. WELLER). *Harvard Med. School.*

2:30 **2165.** Adrenal localization of anti-rat kidney antibodies. R. HIRAMOTO*, Y. YAGI AND D. PRESSMAN. *Roswell Park Mem. Inst.*

2:45 **2166.** Immunohistochemical detection of antibody in cell transfer studies. ALEXANDER L. NEIL* AND FRANK J. DIXON. *Univ. of Pittsburgh.*

3:00 **2167.** Use of tannic acid hemagglutination test in detection of L. E. factor. HOWARD C. GOODMAN AND ROBERT BOWSER*. *Natl. Insts. of Health.* (Physiol.)

3:15 **2168.** Some histochemical and biochemical observations on antibody formation in tissue culture. MARIANO F. LA VIA, LLOYD E. FERGUSON AND STANLEY URIU (intr. by R. W. WISSLER). *Argonne Cancer Research Hosp. and Univ. of Chicago.*

3:30 **2169.** An alligator erythrocyte hemagglutination test for rheumatoid arthritis. E. COHEN*, E. NETER AND I. MINK*. *Roswell Park Mem. Inst.*

3:45 **2170.** Analysis of rheumatoid agglutinating factor by filtration. JOHN H. VAUGHAN AND MARION V. WALLER*. *Med. College of Virginia.*

4:00 **2171.** Inhibition of hemorrhage of local Shwartzman reaction by amino acid esters. ARTHUR G. JOHNSON. *Univ. of Michigan.*

Friday Morning, April 18, 9:00 a.m.

Respiratory Virsues

FRI. A.M.—FOOD SERVICES BLDG., ROOM 404

Chairman: Werner Henle

9:00 **2172.** Replication of influenza virus in cultures of HeLa cells. FRANCIS E. PAYNE* AND W. WILBUR ACKERMANN. *Univ. of Michigan.*

9:15 **2173.** Recycling of influenza virus antigens. FRED M. DAVENPORT AND A. V. HENNESSY. *Univ. of Michigan.*

9:30 **2174.** Serologic behavior of Asian influenza virus in the hemagglutination-inhibition test. BRYON S. BERLIN*, ELVA MINUSE*, ALBERT V. HENNESSY AND FRED M. DAVENPORT. *Univ. of Michigan.*

9:45 **2175.** Rapid identification of influenzal isolates by complement-fixation. FLORENCE S. LIEF*, A. FABIYI* AND W. HENLE. *Univ. of Pennsylvania and Children's Hosp. of Philadelphia.*

10:00 **2176.** Immunization against Asian-type influenza with monovalent vaccines. HARRY M. ROSE, ALICE W. KNOX*, JOSEPH W. COOCH* AND THOMAS W. JONES, JR.* *Columbia Univ.*

10:15 **2177.** Serology of immunization with A/Asian influenza vaccines. KEITH E. JENSEN, R. Q. ROBINSON*, MORRIS SCHAEFFER, GERALD COOPER*, MARGUERITE CANDLER* AND U. PENTTI KOKKO*. *Communicable Disease Ctr., Montgomery, Ala.*

10:30 **2178.** Relation of biological activity of certain steroids to their influence on influenza virus multiplication. EDWIN D. KILBOURNE. *Cornell Univ.*

10:45 **2179.** Multiplication of influenza virus at various temperatures. RICHARD G. MALSBERGER*, OSCAR C. LIU AND BETTYLEE HAMPIL*. *Merck Sharp and Dohme Research Labs.*

11:00 **2180.** Characteristics of adenoviruses types 5, 6 and 7. FLOYD W. DENNY, JR., GEORGIANA S. BOYER*, AND HAROLD S. GINSBERG. *Western Reserve Univ.*

11:15 **2181.** Structure and development of type 5 adenovirus. COUNCILMAN MORGAN, GABRIEL C. GODMAN,* CALDERON HOWE AND HARRY M. ROSE. *Columbia Univ.*

11:30 **2182.** Recovery of type 8 adenovirus from patients with epidemic keratoconjunctivitis. J. J. QUILLIGAN, JR., J. ADRIAN*, B. ALENA* AND R. HOLEMAN*. *College of Med. Evangelists and Los Angeles County Gen. Hosp.*

11:45 **2183.** Typing of adenoviruses by the complement-fixation technique. L. N. BINN*, M. R. HILLEMAN, J. E. RODRIGUEZ*, AND R. R. GLABERE*. *Walter Reed Army Inst. of Research.*

Immunization

FRI. A.M.—FOOD SERVICE BLDG., ROOM 406

Chairman: Geoffrey Edsall

9:00 **2184.** Effect of time on the production of immunological unresponsiveness in chickens. H. R. WOLFE, C. H. TEMPELIS*, AND AUGUST P. MUELLER*. *Univ. of Wisconsin.*

9:15 **2185.** Duration of immunological unresponsiveness resulting from neonatal injection of defined antigens in rabbits. RICHARD T. SMITH. *Univ. of Texas.*

9:30 **2186.** Production of cardiac lesions in rabbits immunized with heterologous heart tissue. MELVIN H. KAPLAN AND JOHN M. CRAIG.* *Children's Hosp., Boston.*

9:45 **2187.** Enhancement of antibody production with streptococcal products. RICHARD M. CONDIE*, DONNA R. JENSEN* AND ROBERT A. GOOD. *Univ. of Minnesota.*

10:00 **2188.** Cellular factors in specific resistance to acute bacterial infection. EUGENE H. PERKINS*, FRED MIYA* AND STANLEY MARCUS. *Univ. of Utah.*

10:15 **2189.** Clearance of radioiodinated pertussis vaccine from the lungs of mice following its intratracheal administration. J. E. LOGAN, B. W. GRIFFITHS AND M. A. MASON (intr. by L. GREENBERG). *Dept. of Natl. Health and Welfare, Canada.*

10:30 **2190.** Immunization studies with ether-killed Brucella abortus. ISRAEL LIVE AND BENJAMIN WOLF*. *Univ. of Pennsylvania School of Veterinary Medicine.*

10:45 **2191.** Immunization with specific precipitates. SIDNEY LESKOWITZ. *Harvard Med. School.*

11:00 **2192.** Effect of homologous spinal cord in Freund's adjuvants on cockerel comb growth. E. RICHARD RANZENHOFER*, A. J. STEIGMAN AND M. M. LIPTON. *Univ. of Louisville.*

11:15 **2193.** Trends of animal rabies in the United States. SETH T. WALTON. *North Carolina State Lab. of Hygiene.*

PAPERS READ BY TITLE

2194. Double infections of monkey kidney cells with ECHO-7 and Coxsackie A-9 viruses studied by the single cell technic. HEICHACHI ITOH*, MATILDA BENYESH* AND JOSEPH L. MELNICK. *Natl. Insts. of Health.*

2195. Effect of thyroprotein and of thiouracil on free tumor cell growth and implantation in ascites tumors. HORACE GOLDIE, WALTON BELLE*, PAUL RANDOLPH* AND CALVIN A. BROWN*. *Meharry Med. College.*

2196. Primary antibody response in mice during the maximum depression period that follows varying doses of x-radiation. T. MAKINODAN AND N. GENGOZIAN.* *Oak Ridge Natl. Lab.*

Visiting Days in Medical School Laboratories

Philadelphia, April 14–17

Monday, April 14

Jefferson Medical College, 1025 Walnut St. *Also the following affiliated laboratories:*

Cardio-respiratory Laboratory, Barton Memorial Hospital, Broad & Fitzwater Sts.

Daniel Baugh Institute of Anatomy, 11th and Clinton Sts.

University of Pennsylvania, School of Medicine, 34th and Spruce Sts. *Also the following affiliated laboratories:*

Laboratories of Children's Hospital, 1740 Bainbridge St.

Henry Phipps Institute, 7th and Lombard Sts.

Wistar Institute, 36th at Spruce St.

Tuesday, April 15

Temple University School of Medicine, 3400 N. Broad St. *Also the following affiliated laboratories:*

Laboratory for Human Renal Physiology, 1413 W. Ontario St.

Laboratories of St. Christopher's Hospital, 2600 N. Lawrence St.

Wednesday, April 16

Hahnemann Medical College, 235 N. 15th St.

Thursday, April 17

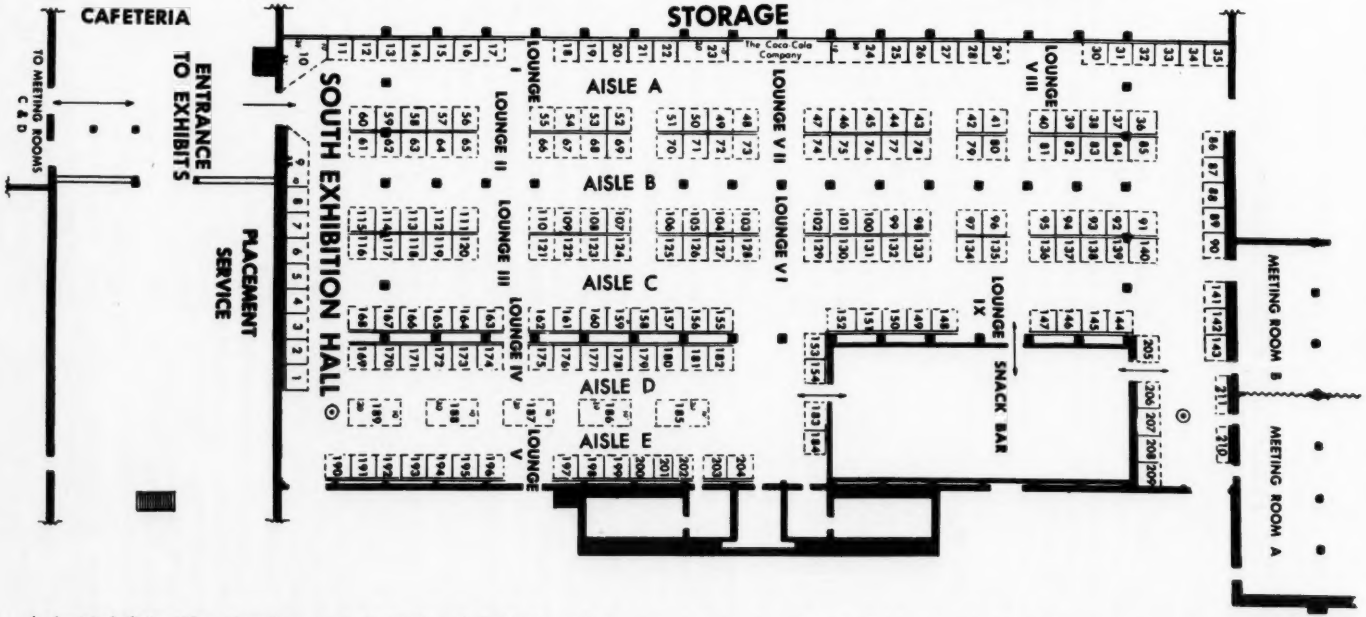
Eastern Pennsylvania Psychiatric Institute, Department of Basic Research, Henry Avenue & Abbottsford Road.

Woman's Medical College, Henry Avenue & Abbottsford Road.

Aviation Medical Acceleration Laboratory, Naval Air Development Center, Johnsville, Pa. (Reservations must be made at the time of registration at the *Information Desk* at Convention Hall not later than Tuesday, April 15. Transportation will be provided by bus from Philadelphia at cost, for visit on Thursday afternoon.)

Other laboratories in the Philadelphia area can be visited by appointment, and laboratories on the above listing can be visited by appointment on days other than those specified.

FLOOR PLAN OF SPACE LOCATIONS FOR EXHIBITS



Industrial Scientific, Member and Institutional Exhibits will be located in the Grand Exhibition Hall of Convention Hall. Inspection periods are as follows: Monday, April 14, through Thursday, April 17, 9:00 a.m. to 5:00 p.m.; Friday, April 18, 9:00 a.m. to 1:00 p.m. For the convenience of scientists who may wish to make appointments or enjoy periods of relaxation between sessions, numbered lounges are provided as indicated in the floor plan.

Industrial Scientific Exhibits

Abbott Laboratories, North Chicago, Ill. (*Booth 57*).

Academic Press Inc., New York City (*Booth 128*), cordially invites you to inspect such new publications as the first volume of *Biophysical Chemistry*, by Edsall and Wyman; *The Chemistry and Biology of Yeasts*, edited by Cook; *A Manual of Paper Chromatography and Paper Electrophoresis*, 2nd ed., by Block, Durrum and Zweig; *Processed Plant Protein Foodstuffs*, edited by Altschul; *Cholesterol: Its Chemistry, Biochemistry, and Pathology*, edited by Cook; *Physiology of Crustacea*, by Waterman; *Biological Ultrastructure*, by Engström and Finean; as well as issues of the new *Journal of Ultrastructure Research*. Visitors will also be able to preview the *Russian-English Medical Dictionary*, by Jablonski. Sample reprints of the Press' affiliate firm, **Johnson Reprint Corporation,** will also be on display.

Advanced Instruments, Inc., Newton Highlands, Mass. (*Booth* 187). Electrolyte instruments in actual operation: *1*) Advanced CO_2 and pH Meter (new)—direct, on-blood electrode readings for $\pm 2\%$ pCO_2 and ± 0.01 pH; HCO_3 from nomogram, 3 min., ½ cc blood. *2*) Advanced Flame Photometer (new)—big instrument repeatability, yet the smallest and least expensive; 1% accuracy for any technician; internal standard; wide user acceptance. *3*) Fiske Osmometer—unprecedented freezing-point accuracy; the standard tool for osmotic pressure everywhere; any body fluid; ± 1 mosm, 0.2 cc.

Aloe Scientific, St. Louis, Mo. (*Booths 66, 67, 68, 69*). This is a large display showing the most recent advances in scientific instruments and furniture as they relate to the biological field. A complete display showing the latest advances in micro dissecting instruments as well as demonstrations on the de Fonbrune micromanipulator and micro forge will be shown. The latest in freeze drying apparatus, electrophoresis, etc. will be demonstrated. A complete bone sectioning apparatus, using undecalcified bone, will be shown. This is a new technique becoming important in autoradiography and microentgenography.

American Electronic Laboratories, Philadelphia, Pa. (*Booth 127*), will display a revolutionary new cuvette oximeter and the tiny intracardiac phonocatheters, along with AEL's standard instrumentation of accurate stimulators, wide band DC amplifiers, ultra-high impedance amplifiers, dual beam oscilloscopes, and classroom equipment. Registrations for the new textbook catalog are being accepted.

American Instrument Company, Inc., Silver Spring, Md. (*Booths 50–51*), will show for the first time the new Aminco-Cotlove chloride titrator and the new absolute light-scattering photometer. Other apparatus to be shown will be the portable electrophoresis, Aminco-Bowman spectrophotofluorometer, rotary Warburg, Kjeldahl digestion and distillation, Jonnard refractometer, pumps, Dubnoff, freezing point depression, freeze-dry, French pressure cell, circulating cooler and absorption cells.

American Optical Company, Instrument Division, Buffalo, N. Y. (*Booths 129–130*), will display and demonstrate a wide selection of microscopes and accessories, including the interference microscope; special long working distance phase accessories; Cycloptic (stereoscopic) and Microstar (compound) microscopes; special photomicrographic equipment. An electro-polarizer will also be featured. Company representatives will welcome inquiries.

American Sterilizer Co., Erie, Pa. (*Booths 2–3*), will exhibit a complete germ-free life rearing chamber, a Cryotherm gas (cold) sterilizer, a laboratory sterilizer with isothermal control, as well as small all-purpose autoclaves and a water still with fully automatic controls. A continuous culture unit will also be exhibited.

American Tobacco Company, Research Laboratory, Richmond, Va. (*Lounge V*). This exhibit will feature an air flow meter which is completely automatic and is insensitive to temperature changes. Errors encountered in manually adjusted instruments are eliminated, resulting in closer control in the manufacture of quality cigarettes. Representatives from the Research Laboratory will be in attendance and will welcome your questions concerning research and quality control. Technical literature will be available for distribution.

Applied Physics Corporation, Pasadena, Calif. (*Booths 165–166*). The Cary Model 14 recording spectrophotometer covering the wavelength range 1860A-3.0 μ. Fluorescence, reflectance and other accessories for the Model 14. Also, the Cary Model 31 vibrating reed electrometer for precise pH determination, C^{14} determination and measurement of mass spectrometer ion currents.

Arcady Farms Milling Company, Chicago, Ill. (*Booth 173*).

Association of American University Presses, New Haven, Conn. (*Booth 133*). Each University Press represented in the exhibit is a separate publishing company producing technical, medical and scholarly works. This joint exhibit enables you to see books from a number of the university presses and, if you so desire, to order them direct from the booth or from the publishing press. A checklist of all of the books on display is available at the booth.

Atomic Accesories, Inc., Bellerose, N. Y. (*Booths 72–73*), will exhibit a complete line of nuclear accessories. Featured items will be the automatic windowless chromatogram scanner (Scanogram), ultrasonic decontaminator and remote handling equipment. Also exhibited will be lead containers, recorders, shielded syringes, sample preparation equipment and other laboratory accessories.

Baird-Atomic, Inc., Cambridge, Mass. (*Booths 103–104*), will exhibit the newest instruments and systems for use in the field of radioactivity detection and analysis. The equipment shown will be of prime interest to those engaged in radioisotope investigations in experimental biology and medical laboratories.

Baltimore Instrument Company, Baltimore, Md. (*Booth 43*), will display a new stereotaxic instrument with rat, cat, rabbit, chicken and monkey head holder; triple electrode holder; micro-injection apparatus; constant syringe drive; Carl Zeiss and E. Leitz microscope; Sartorius analytical balance; Bovie unit attachment micro-switch on handle; optics.

Bausch & Lomb Optical Co., Rochester, N. Y. (*Booth 140*).

Bellco Glass, Inc., Vineland, N. J. (*Booth 174*), cordially invite your attention to the first showing of the DeLong culture flask, an Erlenmeyer-type flask designed for use with the Morton stainless steel culture tube closure. New developments in tissue culture glassware, featuring vessels for spin culture technique, will also be exhibited. Tissue culture glassware (for vaccine production) such as filling bells, air filter tubes, large orifice pipettes, trypsinizing flasks, connecting tubes and mincing tubes, will be shown.

B J Electronics, Santa Ana, Calif. (*Booths 47–47A*), will display its Detectolab nuclear products for the field of laboratory research. Included will be automatic gamma ray spectrum recorders and spectrometers, medical spectrometers, count rate meters, coincidence circuits and a complete complement of proportional and scintillation detectors and counters.

Blakiston Division, McGraw-Hill Book Co., Inc., New York City (*Booth 117*), will feature the following books: Drill's *Pharmacology in Medicine*, new 2nd edition; Grollman's *Clinical Physiology, The Functional Pathology of Disease*; Grant's *Clinical Electrocardiography*; Williamson's *The Healing of Wounds*; Cushing and Campbell's *Principles of Immunology*; the Society of American Bacteriologists' *Manual of Microbiological Methods*.

S. Blickman, Inc., Weehawken, N. J. (*Booths 125–126*), will display stainless steel micro-biological enclosures, equipped with micro-biological filter canisters. The canisters are fitted with electric heating elements to destroy organisms trapped in the filters. This equipment is specially designed for the safe handling of viruses and other potentially dangerous micro-organisms.

Brinkmann Instruments, Inc., Great Neck, N. Y. (*Booths 100–101*), will exhibit a new series of automatic Sartorius balances covering the weight range from 1–4 kg, a complete series of ultra thermostats for highly accurate temperature control of laboratory appliances, optical and electronic instruments, a novel type blood electrode for pH measurements and a series of contact thermometers with matching relays. Another new item is the automatic piston burette, both manually and hand operated, which eliminates all the disadvantages of the standard type precision burette.

Bronwill Scientific Division, Will Corporation, Rochester, N. Y. (*Booth 62*), shows a compact, accurate Warburg apparatus with electronic heating; a redesigned constant temperature circulator, sensitivity 0.01°C, range 0–100°C; the Polytron attachment for the Waring blendor for better mixing, dispersing and homogenizing; the Grayatherm magnetic stirrer and hot plate; a magnetic setting combination thermometer-thermoregulator and the multi-purpose relay.

California Foundation for Biochemical Research, Los Angeles, Calif. (*Booth 24*), will distribute literature and *Aids for the Biochemist*, including a new one. A representative will be on hand to answer questions and discuss the work of the Foundation.

Canal Industrial Corporation, Bethesda, Md. (*Booth 119*), will feature this year their new line of micromanipulators, controlled-temperature cold baths, super-cold storage chests, biological freezing and thawing equipment, tissue embedding chambers, tissue freeze-dry unit, electron micro-

scope accessories, and prototypes of new equipment in biochemical analysis and processing.

Chemical and Pharmaceutical Industry Co., Inc., New York City (*Booth 40*), will exhibit an electric universal thermometer for any temperature control of humans and animals, instant indication, accuracy 0.1° C; applicators for skin, muscles, canals, veins, brain, etc.; also—Erweka all-purpose Lab-master—fourteen available laboratory machines operated by one universal motordrive facilitate research and development work. Time savings estimated up to 70%.

Coca-Cola Company, Atlanta, Ga. (*Special Area*). Ice-cold Coca-Cola will be served through the courtesy and cooperation of the Philadelphia Coca-Cola Bottling Company and The Coca-Cola Company.

Coleman Instruments, Inc., Maywood, Ill. (*Booths 153–154*), will display their famous "analytical instrument teams" for the clinical laboratory—Coleman Junior spectrophotometers, Coleman flame photometer, the Coleman Universal spectrophotometer—and a new team member, the Coleman electronic photofluorometer, all working together to bring unequaled versatility, reliability, precision and speed to the medical technologist. Booth personnel will be continuously available for consultation on problems of analytical instrumentation, instrument operation and maintenance.

Colson Corporation, Elyria, Ohio (*Booth 163*). The new Colson infra-red densitometer for use with the new Fox Green dye will be demonstrated on a model of the circulation. Actual output curves will be recorded using the Colson constant flow system. The new densitometer can also be used for oximetry by a simple change of filters. A new low resistance spirometer will be demonstrated which permits rapid determination of maximum breathing capacity and other pulmonary functions. Values are presented directly in numerical form. The Model 110 automatic blood pressure recorder will also be available for demonstration.

Corning Glass Works, Corning, N. Y. (*Booth 102*), will display the newest developments in laboratory glassware, including micro- and needle valve ware. The exhibit includes custom made ware, standard items in Pyrex, Vycor and Corning brands, and low actinic and fritted ware. A feature is a display of several shapes in Pyroceram, Corning's newly developed crystalline material formed from special glasses.

Custom Engineering & Development Co., St. Louis, Mo. (*Booth 4*), will demonstrate their line of Nitralyzer nitrogen meters, precision electronic servo-spirometers, and data-correcting instrument linearizers. Also on display will be their new 60-planchet automatic fraction collector and constant volume pump, and a high-gain 2-microvolt noise level preamplifier for EEG studies.

Coulter Electronics, Chicago, Ill. (*Booth 122*). Their automatic cell counter and cell size analyzer will be shown. Apparatus counts and sizes, on a 3-dimensional basis, in the size range from below 1 μ to 100 μ at a rate of several thousand individual cells per second. A typical count may be 50,000 cells in a 13-second interval for an improvement in accuracy of 5 or 10 times over a tedious microscope count.

Current Contents of Pharmaco-Medical Publications, Philadelphia, Pa. (*Booth 36*), is a new weekly publication of Eugene Garfield Associates. Reproductions of the advance or current tables of contents of 300 primary journals make this up-to-date service indispensable to teachers and research workers in pharmacology, pharmaceutical chemistry and clinical medicine.

Difco Laboratories, Inc., Detroit, Mich. (*Booth 80*), will exhibit newly developed standardized laboratory reagents. These will include antisera for enteropathogenic *E. coli*, Salmonella, Shigella, Klebsiella, Streptococci, and C-protein antisera; Bacto-sensitivity disks, Unidisks, streptolysin O reagent, and reagents for blood coagulation studies and liver and kidney function determinations; serological reagents for syphilis, including cardiolipin, lecithin, treponemal antigens, complement and amboceptor, as well as media and reagents for all microbiological procedures including tissue cultures and virus studies.

E. I. du Pont de Nemours & Co., Wilmington, Del. (*Booths 197–198*). Lysine: a model showing the general metabolic pathways of essential and nonessential amino acids in the synthesis of body protein is featured at their exhibit. Representatives discuss recent evidence of the relation of the syndromes of poor bone growth and density, anemia and susceptibility to disease to a lack of amino acids or high quality protein in the diet. The possibility of improving the quality of certain plant proteins by amino acid supplementation is also stressed.

Eaton Laboratories, Norwich, N. Y. (*Booth 25*). Staff members of various scientific departments will be available to provide information and literature on the antimicrobial nitrofurans. The various dosage forms of the 6 nitrofurans now in use in human and veterinary medicine will be on display.

Eberbach Corporation, Ann Arbor, Mich. (*Booth 29*), for the first time will show their new shaker-water baths, available in two sizes. Conventional rotating and reciprocating shakers will also be on display. New models of laboratory stirrers and stirrer accessories will be in operation.

E-C Apparatus Company, Swarthmore, Pa. (*Booth 23*), will exhibit new apparatus for the analysis and fractionation of chemical and biological materials—countercurrent fractionator for quantitative separations in 2-phase solvent systems; electroconvection apparatus for preparation of pure proteins; electrophoresis apparatus for either starch block or paper strip, with provision for simultaneously experimenting at 3 different pH values and with water-cooled pressure plates; a new compact fraction collector.

Edin Company, Inc., Worcester, Mass. (*Booth 121*), will display the modular recording system, recording up to 8 functions simultaneously. Numerous amplifiers are available. The mobile anesthograph records the electroencephalograph and electrocardiograph. The wave form analyzer analyzes the frequency components of complex wave forms. The fractionator collects fluid samples on a time basis. Edin's oscilloscope scans phenomena with an accurate slow speed sweep.

Electric Hotpack Co., Inc., Philadelphia, Pa. (*Booths 170–171*), will display a newly designed line of constant temperature water baths with flexible heat control, visa-glass protection of controls; new mechanical convected ovens including a safety oven and chromatography dryer; photographs of installation of special pilot plant and laboratory equipment.

Electronics for Medicine, Inc., White Plains, N. Y. (*Booth 162*).

J. H. Emerson Company, Cambridge, Mass. (*Booth 81*), will show a simple micromanipulator. The horizontal motions in all models are controlled by a "joy-stick" in such a way that movements of the hand and apparent motions of the microinstrument are always the same. Apparatus for respiratory physiology will also be displayed, including a body plethysmograph, alveolar gas sampler, and a "ventube."

Encyclopaedia Britannica, Chicago, Ill. (*Booth 22*), proudly announces the release of a brand new edition. Fourteen years of intensive editorial effort, representing an investment of more than five million dollars, is reflected in this new edition. You are cordially invited to inspect their booth.

Ensco Engineering Specialty Co., Salt Lake City, Utah (*Booth 37*), will display a linear output type oximeter amplifier; dye injection system complete with mechanical injector and electronic triggering or control device; a function generator; a pacer—or pacemaker—for heart stimulation; millivolt input, high gain, chopper stabilized DC amplifier; and other unique custom physiological research equipment.

Falcon Plastic Products, Culver City, Calif. (*Booth 91*). Convenience, efficiency, and economy keynote the new products being introduced by this company. The sole manufacturers of single-use plastic Petri dishes. Look for the new "Swubes", tissue dishes, culture tubes, and antibiotic assay spiders as well as other disposables. If you have special needs in plastics feel free to come in and talk them over.

Fisher Scientific Co., Pittsburgh, Pa. (*Booths 134–135*). The improved Fisher-Van Slyke manometric blood gas apparatus will be demonstrated. A new precalibrated instrument—the hemophotometer—for faster hemoglobin determinations; the Fisher-Gulf partitioner, for gas-liquid partition chromatography; balances; electrophoresis apparatus; Drabkin's dry mixture; serological water baths; and other time-and labor-saving laboratory equipment will also be on display.

J. Melvin Freed, Inc., Perkasie, Pa. (*Booth 113*), will exhibit pre-cleaned microscope slides packed in the new Stand-Rite microscope slide box that keeps micro slides in compact vertical position, avoids fingermarks on slide surfaces and makes them easier to handle. Also displayed will be concavity slides and the Corning Brand optical cover glass.

Gilson Medical Electronics, Middleton, Wis. (*Booth 42*), will exhibit the improved GME volumetric fractionator, ultraviolet absorption meter, transferator, GME-Lardy Warburg apparatus, GME polygraph-electroencephalograph, the compact portable 2-channel GME cardio-encephalograph. The 20,000-volt GME electrophorator will be in Philadelphia at a nearby laboratory.

Graf-Apsco Co., Chicago, Ill. (*Booth 6*), will be prepared to serve you regarding your microscope requirements. Because they are the leading microscope repair house in the country, they are in a position to help you with your special micro equipment. They will display the new Carl Zeiss research and laboratory microscopes and guaranteed rebuilt instruments. Consult with them on any microscope problems.

Grass Instrument Company, Quincy, Mass. (*Booths 123–124*), will exhibit instruments designed

for electrophysiological research. Among these are the new Model 5 polygraph for recording of many physiological variables. Both AC and DC preamplifiers, input probes, stimulators, oscilloscope camera and an instrument table to house this equipment will be shown. The Grass line of strain gauge transducers will be displayed. Competent personnel will be on hand to discuss problems involving the application and use of these instruments in the fields of physiology, pharmacology, peripheral circulation, neurology and surgery.

Grune & Stratton, Inc., New York City (*Booth 7*). Mr. Frank Kurzer welcomes you to this booth where you can examine important new books, such as Thannhauser's *Lipidoses: Diseases of the Cellular Lipid Metabolism,* 2nd revised edition; Volumes I and II of Saphir's *A Text on Systemic Pathology*; Kossman's *Progress in Electrocardiography*; Lacassagne and Gricouroff's *Action of Radiation on Tissues*; *Proceedings of the Sixth International Society of Hematology,* Boston; Cartwright's *Diagnostic Laboratory Hematology,* 2nd revised edition; Diamond's *The Medical Management of Cancer*; and many other books.

William J. Hacker & Co., Inc., New York City (*Booth 190*). The exhibit will include the Reichert research microscope Zetopan, Universal camera microscope Me F, laboratory microscope Biozet, equipment for fluorescence microscopy, cine and photomicrography, micro-projection, "anoptral" and conventional phase contrast; also clinical and rotary microtomes made by Reichert and Jung, and Kofler micro-hot and cooling stages.

Harshaw Scientific, Division of Harshaw Chemical Co., Philadelphia, Pa. (*Booths 8–9*), and their nationwide sales offices and warehouses will display laboratory furniture, a UV and visible spectrophotometer with an AC power source, new equipment for freeze drying, chromatography, micro, macro and analytical balances, improved micro hematocrit centrifuge and other new items for the biochemist and biologist.

Harvard Apparatus Company, Dover, Mass. (*Booth 150*). This company is a non-profit organization founded by physiologists for the purpose of advancing teaching and research in physiology and allied sciences, by the manufacture and development of apparatus. Newer items on exhibit include: rodent decapitator, carbon dioxide analyzer, infusion pumps and recorders.

Heinicke Instruments, Hollywood, Fla. (*Booth 144*), will exhibit the 1958 glassware washers and cage washers which include the newly patented Heipulser, a high frequency pulsing, superimposed on the jet streams of their washers. The Heipulser exerts a push-pull on deposits and increases the effectiveness of Heinicke washers by a factor of 4.

Instrumentation Associates, New York City (*Booths 109–110*), will exhibit biochemical, physiological and cardiopulmonary apparatus, including the Pulmotest and Pulmo-Analysor, with accessories for cardiopulmonary studies. There will also be featured an attachment adapting the Pulmotest for compliance studies; respiratory gas analysis equipment employing three different physical principles; and the Jaquet ergometer and the new Bird residual breather.

International Equipment Co., Boston, Mass. (*Booth 41*), cordially invites you to visit their booth to discuss all centrifuging problems. They will display their latest centrifuging equipment for the research laboratory.

Isotope Chemical Co., Chicago, Ill. (*Booth 151*).

Kimble Glass Co., Toledo, Ohio (*Booth 116*), will exhibit their new line of "hard glass" apparatus. This laboratory glassware is made from KG-33 borosilicate glass and is trademarked, KIMAX. A comprehensive sampling of the new KIMAX glassware will be shown.

Kontes Glass Co., Vineland, N. J. (*Booth 5*).

Labline, Inc., Chicago, Ill. (*Booth 53*), will exhibit two new pieces of equipment never before available, a high-speed continuous paper electrophoresis unit and a high-speed paper chromatographic unit. Both will be in operation, showing a new principle of operation utilizing variable centrifugal force, and results produced. Other equipment will be Imperial Incubators, baths, #1 and #2 centrifuges, and other laboratory apparatus. In attendance will be Alexander I. Newman, President; Donald V. Magnuson, Director of Research; and Frank W. Wilson, Eastern Representative.

Laboratory Glass & Instruments Corp., New York City (*Booth 161*), will exhibit the Chloridometer, a new method for determining chlorine contents of body fluids within 24–40 seconds in most cases for samples of 0.1 ml. They will also exhibit a new rotary flash-evaporator, a more compact and balanced design. Also on display will be the Evapomix, omni-shaker, electrophoresis apparatus and standard flash-evaporator.

Arthur S. Lapine & Co., Chicago, Ill. (*Booth 21*), will exhibit Tempunit, the self-contained water bath controller, heater and circulator; new magnetic stirrer and seamless Teflon stirring bars; new laboratory heating tapes and heating mantles; Leybold atom and crystal lattice models; Lanco specialties for your laboratory.

Lea & Febiger, Philadelphia, Pa. (*Booth 61*). Be sure to see: DiFiore, *Atlas of Human Histology*; Chandler, *Deciduous Orchards*; Faust and Russell–Craig and Faust's *Clinical Parasitology*; Reddish, *Antiseptics, Disinfectants, Fungicides and Chemical and Physical Sterilization*; Smith and Jones, *Veterinary Pathology*; Wintrobe, *Clinical Hematology*; Gray's *Anatomy*; Claus, Gathercoal and Wirth's *Pharmacognosy*; Levinson and MacFate, *Clinical Laboratory Diagnosis*; and other books of interest to biologists.

E. Leitz, Inc., Scientific Instruments Div., New York City (*Booth 188*), will exhibit biological Panphot, photomicrographic camera with special flat field objectives and new Xenon gas-filled lamp; new freezing microtome; Prado microprojector; Ortholux research microscope with accessories for fluorescence equipment; standard laboratory and medical microscopes, including accessories for phase contrast; photomicrographic camera with accessories for both micro and macro work.

P. M. Lennard Co., Inc., Brooklyn, N. Y. (*Booth 1*), manufacture for the bacteriological field: bacteriological transfer hoods, fume hoods, absolute filter chambers and the new pathogen-free animal cages, and humid chamber. For the chemical and nuclear industries: low humidity dry-boxes, glove-boxes, fume hoods, safety control equipment, etc. For the pharmaceutical industry: sterile packaging enclosures, exhaust filter systems and the new sodium arc gas purification system.

Linbro Chemical Co., Inc., New Haven, Conn. (*Booth 97*), will feature their new model Disposotray for laboratory titrations. They have also developed a highly concentrated industrial type liquid cleaner for use in all mechanical washers. It is claimed to be the ideal cleaner for ultrasonic washing equipment.

J. B. Lippincott Company, Philadelphia, Pa. (*Booth 11*), will present for your approval a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

Little, Brown & Co., Boston, Mass. (*Booth 114*), will include many books, both brand new and of established interest, including all the books in the Ciba Symposia; Strauss, *Body Water in Man*; McIlwain, *Biochemistry and the Central Nervous System*; Nabarro, *Biochemical Investigations in Diagnosis and Treatment*; Henry Ford Hospital Symposium, *Hepatitis Frontiers*, and many other books. The booth will be manned by their representatives who are fully informed on all titles.

Lourdes Instrument Corp., Brooklyn, N. Y. (*Booth 115*), will display: new continuous flow super-speed centrifuge rotors with polyethylene bag liners (patent applied for); new fully automatic acceleration super-speed centrifuges with dynamic braking; new 3-liter capacity (6 x 500 cc) super-speed centrifuge rotor; refrigerated super-speed centrifuge with newest, most efficient refrigeration design (patent applied for); all-purpose multi-mixer with a variety of containers for sealed homogenizing; various models of non-refrigerated super-speed centrifuges.

Macmillan Company, New York City (*Booth 17*), cordially invite you to visit their exhibit, where many outstanding titles in scientific and medical literature will be on display. Recent publications include Keith-Rowe-Vlad, *Heart Disease in Infancy and Childhood* and Musser-Bird, *Modern Pharmacology and Therapeutics*.

Josiah Macy, Jr. Foundation, New York City (*Booth 30*), will display the *Transactions* of current and past Conference series. They cordially invite you to visit their booth and inspect the most recently published *Transactions* on *Glaucoma, Physiology of Prematurity, Gestation, Polysaccharides in Biology*, and *Shock and Circulatory Homeostasis*, as well as earlier volumes.

Medical-Electronics Development Co., Great Neck, N. Y. (*Booth 74*).

Meinecke & Co. Inc., New York City (*Booth 108*), will display and demonstrate Haemo-Sol, the truly outstanding chemical preparation specifically designed for the cleaning of scientific apparatus such as laboratory glassware, syringes, etc. Haemo-Sol is entirely free rinsing, leaving no film or residue to interfere with subsequent titrations. Moreover, Haemo-Sol prevents any etched condition on glassware. Laboratory approved for tissue culture work. Also, it has been found that Haemo-Sol is the ideal preparation for use in connection with a flame photometer. Further, Haemo-Sol NS, the low sudsing formula for mechanical washers, will be included in the display.

Metro Industries, Long Island City, N. Y. (*Booth 52*), will demonstrate a new model of the photoelectric tensometer with strip-chart recording of blood pressure measurements. Also on display will be many other pharmacological and physiological instruments, including the new electro-reflexometer for conditioned reflex observations; full line of Metroware small-scale

organic glassware and introducing the Metrogrammic Line, as well as remote handling accessories for radioactive materials.

Mettler Instrument Corp., Hightstown, N. J. (*Booth 64*), will exhibit representative instruments from their famous line of analytical, multi-purpose and precision balances. Models include a complete line of balances from micro to direct-reading platform balances. High-speed weighings, high accuracy are inherent features through optically projected scale readings, mechanical weight handling and substitution method of weighing.

Microbiological Associates, Inc., Washington, D. C. (*Booths 54–55*), will graphically illustrate the methods of production in developing for the new ECHO and Coxsackie viral diagnostic antisera. They have available 30 different cell strains for microscopic examination and display culture media for various cell lines, and tissue culture equipment.

Micro-Metric Instrument Co., Cleveland, Ohio (*Booth 76*). Microanalytical instrumentation designed to speed data collection and reduce the time consumed in routine laboratory duties. Among the various items exhibited will be their Micro-gasometer, syringe Microburet, Warburg calibrator, Micro screw syringes, magnetic stirrer, Micro test tube stirrer, Cartesian diver respirometer and diver filler, pipette washer and dryer and automatic pickup tweezers.

Miles-Ames Research Laboratory, Elkhart' Ind. (*Booth 172*).

C. V. Mosby Co., St. Louis, Mo. (*Booth 158*), will display for leisurely-examination its latest text and reference books in the fields of physiology, pathology, biochemistry, nutrition, hygiene, etc. They invite and welcome discussion concerning your book requirements for teaching or reference.

National Aniline Division, Allied Chemical & Dye Corp., New York City (*Booth 167*). Their Pharmaceutical Sales Department will present a new display which features color photomicrographs illustrating applications of some of the widely used biological stains sold by them. They also call your attention to the other types of products offered which include pharmaceutical chemicals, pH indicators, oxidation-reduction indicators, diazo salts, and staining solutions.

National Drug Company, Philadelphia, Pa. (*Booth 118*), will concern itself with Cervilaxin, their brand of relaxin. It consists of 3 panels each 3 x 7 feet, on which are 7 illustrations showing various aspects of the action of relaxin in the laboratory and its clinical use in facilitating normal labor.

National Instrument Laboratories, Inc., Washington, D. C. (*Booth 160*), will show several new instruments developed in collaboration with leading research centers: the Long perfusion pump for the study of surviving isolated organs, the Forscher electronic lesion maker, the Mark III double-beam automatic recording microdensitometer, and the new Optica grating spectrophotometer. Also on exhibit will be the N.I.L.-Merck sonic gas analyzer for measuring respiratory gases; the N.I.L.-Riggle photoelectric drop counter, designed by the Instrument Section of the National Institutes of Health; and the N.I.L. chromagraph for automatic scanning and integrating of chromatographic and paper electrophoresis strips.

New Brunswick Scientific Co., New Brunswick, N. J. (*Booth 182*), will exhibit their Gyrotory shakers, constant temperature water bath shakers and an incubator-shaker—all of improved design —which have been widely accepted in research and routine laboratory procedure. A fermentor stand variable drive assembly with fermentors and featuring the new antifoam attachment will be demonstrated.

New England Nuclear Corp., Boston, Mass. (*Booths 70–71*). The exhibit will highlight their principal products which are carbon-14 and tritium labeled compounds, beta and gamma reference sources and standard source compounds, and self-luminous paint. New carbon-14 and tritium labeled compounds will be indicated. Personnel will be on hand to discuss the carbon-14 and tritium analytical services carried out with a liquid scintillation spectrometer.

Nuclear-Chicago Corp., Chicago, Ill. (*Booths 111–112*), will exhibit a complete line of radioactivity measuring instruments for biological research. They will also include scalers, ratemeters, radiation detectors, and complete counting systems. Featured also will be the Dynacon, a new precision dynamic condenser electrometer for measuring tritium or carbon-14 samples in either the gas, liquid, or solid phase; also, the Actigraph II, a completely new, automatic system for scanning radiochromatograms. A new radiochemical price list and information brochures of featured instruments will be available.

Nuclear Corporation of America, St. Louis, Mo. (*Booth 120*), will display for the first time a new line of NRD transistorized scalers and other new nuclear counting instruments, engineered to provide lifetime dependability. **Isotope Specialties Co.,** a NUCOR division, will display a complete line of C^{14} compounds.

Nuclear Measurement Corporation, Indianapolis, Ind. (*Booth 131*). A two-dimensional com-

pletely automatic chromatograph scanner with detector, recorder and transport system all in one unit. Transistorized scaler unit with fail safe counting strips. Transistorized proportional counter with extremely high sensitivity and low background new transistorized scintillation counters.

Nucleonic Corporation of America, Brooklyn, N. Y. (*Booth 152*), will display new nuclear radiation detection instrumentation and accessories for research, medicine, and educational applications: G-M detectors, scintillation counters, measuring instruments–scalers and ratemeters, automatic computers; low-cost medical instrumentation package radioactive isotopes and Carbon 14 compounds.

Opplem Company, Inc., East Rutherford, N. J. (*Booth 200*). Operating models of the new ZCS table model inverted microscopes for tissue culture work will be displayed. In addition, the Opplem time lapse apparatus will also be displayed in operation. New research microscope with projection viewers for small discussion groups will be displayed and available for demonstration.

Organon Inc., Orange, N. J. (*Booth 191*). Visitors are cordially invited to visit this booth for information on new therapeutic specialties. Among these will be Liquamar, a new and potent oral anticoagulant, which offers many clinical advantages over other such drugs; and Cortophin-Zinc, the exclusive Organon brand of ACTH. Literature will be available and the personnel will be happy to discuss these advances in therapy with all clinicians, pharmacologists and others.

Oxford University Press, Inc., New York City (*Booth 169*). Highlights of exhibit will be two new endocrinology books, edited by Joseph T. Velardo of Yale, with an impressive list of contributing authors. The first, *The Endocrinology of Reproduction*, is the first textbook published in this vital area. The second, entitled *Essentials of Human Reproduction: Clinical Aspects, Normal and Abnormal*, is designed for clinicians and general practitioners.

Packard Instrument Co., LaGrange, Ill. (*Booths 105–106*), will demonstrate their new completely automatic Tri-Carb liquid scintillation spectrometer in actual operation counting up to 100 samples of tritium, carbon-14 or other beta-emitting isotopes at each loading. Windowless and Flo-Window counters for counting solid samples of alpha and beta emitters will also be exhibited, as will the complete line of Packard automatic fraction collectors and accessory equipment for column chromatography.

Pentex Incorporated, Kankakee, Ill. (*Booth 157*), will feature purified reagents and intermediate specialty products needed for full scale biochemical research. Included are control reagents, enzymes, purified proteins, and blood proteins and derivatives. Pilot plant, bulk chemical manufacture and consultation facilities are readily available.

Phipps & Bird, Inc., Richmond, Va. (*Booth 175*), will display apparatus of interest to both the teacher and investigator in physiology and pharmacology and related fields. In addition to standard equipment, like kymographs, respirator pumps, stimulators, kymograph recording camera, manometers, etc., they will exhibit their syringe retractor, cardiotachometer, and bath for study.

Phoenix Precision Instrument Company, Philadelphia, Pa. (*Booth 181*), have complete facilities and personnel available for engineering, research, development, design and manufacture of new instruments and automatic control systems used in research laboratories for special studies and applications. They invite your inquiries on specialized instrumentation. A few of their standard products include: aerosol and smoke photometers, light scattering photometers, photoelectric differential refractometers, turbidimeters, colorimeters, DC amplifiers, monochromatic light sources, etc.

Professional Tape Co., Riverside, Ill. (*Booth 75*), will show labeling systems for laboratory use providing a degree of safety, speed and convenience for labeling any type of container or object. Their products known as Time Tape and Time Labels, are made from a tough impregnated paper coated with vinyl, carrying the properties to stand up in the refrigerator, incubator, autoclave or deep freeze. They will cling to all types of material—glass, metal, cloth, paper, wax coated surfaces—and are resistant to oils and moisture. Time Tape is also imprinted for special quality control, stock control or any other procedure required for the laboratory or industry.

Radio Corporation of America, Camden, N. J. (*Booths 48–49*), will display a plastic background with Adlux enlargements of biological electron micrographs prepared from originals taken on our EMU-3 by Dr. Keith Porter of Rockefeller Institute. They will also have an operating model of RCA Type EMU-3 electron microscope including the new high magnification device which permits direct electronic magnification up to 200,000 times.

Ralston Purina Company, St. Louis, Mo. (*Booth 95*), will feature samples of all the Purina Chows made for laboratory animals along with analysis of these Chows and other feeding informa-

tion. As a special feature there will be a monkey on exhibit which has been fed exclusively on their new Monkey Chow. Bring your particular animal feeding and management questions to their booth for expert counsel and advice.

Raytheon Manufacturing Co., Waltham, Mass. (*Booth 78*).

Research Specialties Co., Berkeley, Calif. (*Booths 145, 146, 147*). Their major products in each of the following categories are on display and qualified technical personnel are on hand to answer inquiries. The chromatography section features new gas chromatography equipment and, for paper chromatography, a new Formica-lined Chromatocab. In the micropipette section samples of all styles are displayed. The radiochemical section has RSCo's experienced radiochemists available for consultation on C^{14} tracer problems. Important new and improved items are shown in the section on specialized laboratory instruments.

Sanborn Company, Waltham, Mass. (*Booths 14–15*). Research worker and clinician alike will find much of interest to examine and discuss at their exhibit—recording systems (single and multi-channel; direct, photographic, and tape), monitoring, oscilloscopes and transducers (pressure, temperature, etc.). Much of this equipment will be demonstrated by working displays or by preproduction models, to aid understanding of function and of operating features. Competent representatives—engineer, technical and sales—will be at hand to show the instruments and to discuss your recording problems, without obligation.

Sandoz Pharmaceuticals, Division of Sandoz, Inc., Hanover, N. J. (*Booths 177–178*). Pharmacologic properties and psychotogenic effects of some lysergic acid derivatives. Structural analogues of *d*-lysergic acid diethylamide or LSD-25 have been prepared either by altering the amide grouping or by substitutions in the lysergic acid ring system. Some of these alterations minimize or suppress, others fully preserve the psychotogenic (LSD-like) activity. Correlations between some pharmacologic properties and psychic effectiveness are shown.

W. B. Saunders Company, Philadelphia, Pa. (*Booths 195–196*), cordially invite you to visit their exhibit and examine their complete list of books in your field of interest and related scientific areas.

Schwarz Laboratories, Inc., Mount Vernon, N. Y. (*Booth 46*). More than 190 biochemicals now made by this company are featured in the exhibit. Members of the staff will be present to answer questions about the company's products. Among the biochemicals exhibited are the latest additions, including pure L-glutamine for clinical investigations in peptic ulcers, mental deficiency, alcoholism, epilepsy, hepatic coma, ammonia toxicity, and as substrate in tissue culture and virus production; 2-aminoethylisothiouronium Br HBr as an antiradiation agent; and tritiated thymidine for studies of growth.

Scientific Industries, Inc. Springfield, Mass. (*Booth 16*), will feature special items of laboratory apparatus. The new shaking attachment for the Natelson microgasometer will be demonstrated. Their new Ultra-buret and Holaday rotator will be shown in operation. Also shown will be transistorized regulated power supplies and an unusual new reference cell that plugs into the regular 110-v 60-c line. Other accessories of interest will also be shown.

Scientific Products, Division of American Hospital Supply Corp., Evanston, Ill. (*Booth 65*), will feature ketosteroid analysis apparatus; new ultraviolet microscope illuminator, laboratory model; ultrasonic cleaner and noiseless freezing microtome attachment; also, new products for micro laboratories and single use disposables for laboratory safety and convenience. In all more than 30 new products have been developed since last year's meeting.

House of Seagram, New York City (*Booth 18*). Congeners (fusel oil, aldehydes, acids, etc.) are compounds found in all alcoholic beverages that provide the taste, bouquet and color. In too high concentrations, however, they can cause undesirable after-effects. The exhibit is based on analyses by Foster D. Snell, Inc., consulting chemists, showing how leading brands of various alcoholic beverage types differ in their congeneric concentration.

Sigma Chemical Co., St. Louis, Mo. (*Booth 107*). Representatives will be present to discuss any problems incurred in the use of Sigma research chemicals. Suggestions for the preparation of unavailable compounds and for improving services are welcome. Persons interested in the isolation of new cofactors are invited to visit their booth.

Smith, Kline & French Laboratories, Philadelphia, Pa. (*Booths 10-10A*). "Ideas at work"—they will describe seven major areas of research concentration at their laboratories and give a complete pictorial account of the principal scientific disciplines "at work."

Ivan Sorvall, Inc., Norwalk, Conn. (*Booths 148–149*), will display a number of completely new

Sorvall centrifuge developments. Shown in operation will be the Szent-Gyorgyi-Blum continuous flow centrifuge for uninterrupted processing of large quantities of solution at high speeds. Also, the Type SS-3 push-button superspeed (the first automatic unit in its range), the enclosed Type SS-4 superspeed, the dependable Servall superspeed refrigerated centrifuge; a new Type GSA large capacity, high-speed rotor, and several completely new rotor developments.

Spinco Division, Beckman Instruments, Inc., Palo Alto, Calif. (*Booths 19–20*), will show for the first time two new instruments: the Amino Acid Chromatograph which automatically quantitates over 20 amino acids, and the Centrifilmer for irradiating extremely thin liquid films by ultraviolet light. Other instruments on display will be the 50,000 *g* Model K centrifuge and the LB-2 medical gas analyzer for measuring CO_2 and anesthesiology gases.

Standard Polarimeter Co., Hackensack, N.J. (*Booth 45*).

Standard Scientific Supply Corporation, New York City (*Booth 96*).

C. H. Stoelting Co., Chicago, Ill. (*Booth 98*), are offering the greatest range of advanced teaching and research instruments for medical schools and of special interest to physiologists, biophysiologists, neurophysiologists and psychologists. Exhibited are a multi-channel oscillograph with amplifiers, transducers and recorders, also the superb Cailloux micro-manipulator and the following stereotaxic instruments: Stellar-Johnson, Johnson 210, Johnson-Kreig, and related items.

Technicon Co., Chauncey, N.Y. (*Booths 58, 59, 60*). In addition to their regular products, they will show their new Autoanalyzer, a device for automatically doing routine blood chemistry analyses. Techniques have been worked out so far for automatic determination of blood urea nitrogen, glucose, and calcium. Many methods for the determination of other constituents are ready for release, and others are under development. Thus, for the first time, *in vivo* experiments can be performed, continuously analyzing blood from various parts of the body. Also in operation, will be the Technicon automatic fraction collector.

Arthur H. Thomas Co., Philadelphia, Pa. (*Booths 26–28*), will exhibit: Seligson automatic pipette; Seligson modification of Van Slyke manometric apparatus; Schöniger micro combustion apparatus; new Thomas chromatography cabinet, tank, spray bottle, etc.; electronic battery for Beckman DU spectrophotometer; Spinco electrophoresis apparatus: Franz microtome knife sharpener, Boehnke kymograph, etc.

Tracerlab Inc., Waltham, Mass. (*Booths 12–13*), will exhibit radioisotope chromatogram scanning system, automatic sample counting system, personnel protection equipment, sample preparation equipment, and spectrometry devices.

Tri-R Instruments, Long Island City, N.Y. (*Booth 155*), invite you to discuss your temperature measurement problems. On display will be their thermistor type temperature indicators, controllers, recorders and complete line of probes and accessories. Their magnetic stirrer, Teflon homogenizers, egg punch, etc. will also be shown.

D. Van Nostrand Company, Inc., Princeton, N. J. (*Booth 164*), will exhibit the complete revised, thorough, up-to-date 1958 edition of their *Scientific Encyclopedia*, the only one-volume authority of modern science available today; Ralph Singleton's *Nuclear Radiation in Food and Agriculture*, the last volume of *The Geneva Series on the Peaceful Uses of Atomic Energy*; and a wide selection of new reference books in the various branches of biology.

Volk Radiochemical Co., Chicago, Ill. (*Booth 168*), will feature demonstrations of the new Forro automatic chromatogram scanner, a highly sensitive system for detecting and recording distribution of radioactivity on strip chromatograms, and also a system for continuously monitoring C-14 in expired air. Other isotope laboratory equipment such as micropipets, controls, shielded and miniature delivery syringes, and stainless steel trays are included.

Warner-Chilcott Laboratories, Morris Plains, N.J. (*Booth 199*). The Laboratory Supply Division of the company will exhibit new concepts in diagnostic reagents for the clinical laboratory. Several of these products of their research are notable advancements in the field of enzyme activity. Most dramatic is Phosphatabs, a highly simplified procedure for serum phosphatase levels.

Waters Corporation, Rochester, Minn. (*Booth 187*). Featured will be the new XC-100A densitometer for dye curve recording in cardiac research and diagnosis using the Fox Green dye. Also improved oximeters, photographic recorders, nitrogen and helium gas analyzer, cardiotachometer and thermistor with extrasensitive, fast probes.

John Wiley & Sons, Inc., New York City (*Booth 56*), publishers in science and technology for 150 years, will display their latest basic textbooks and reference works in all areas of the biological sciences. The 2nd edition of the well-

known *General Biochemistry* by Fruton and Simmonds will be exhibited for the first time.

Will Corporation, Rochester, N.Y. (*Booth 63*), will be exhibiting Yellow Springs Instrument thermistor tele-thermometers with interchangeable probes; the Chromatofuge for accelerated paper chromatography and the electro-chromatofuge; Spinco Analytrol recording densitometer; Spinco paper chromatographic chamber; the new Cahn electrobalance for micro weighings with accessories facilitating standard solution make-ups and micro specific gravity determination; and disposable, single-use plastic Petri dishes, culture tubes and sampling containers.

Williams & Wilkins Company, Baltimore, Md. (*Booth 79*), is showing the new 7th edition of *Bergey's Manual of Determinative Bacteriology*. Also on display are the new third edition of Rhodes and Van Rooyen, *Textbook of Virology*, the journal *Stain Technology*, and other books and journals of interest to the basic sciences.

Carl Zeiss, Inc. New York City (*Booths 136-137*). On display will be the world renowned Carl Zeiss, West Germany, scientific optical instruments, such as: camera microscope Ultraphot II with automatic exposure setting device; photo microscope with built in 35mm camera and automatic exposure setting device; research microscope WL; popular laboratory microscopes GFL and KF, dissecting microscopes and microscopic accessories. Also, spectrophotometer PMA II for rapid, reliable and accurate photometric measurements of liquids, gases, and solids at the highest resolving power of the spectrum. Operated directly on 110-v, AC.

Member and Institutional Exhibits

American Association for the Advancement of Science, Washington, D. C. (*Booth 204*). The exhibit will feature information on AAAS activities and publications. Samples of the new *Science* magazine will be available for distribution. Current AAAS Symposium volumes will also be shown. Attending scientists are invited to join the AAAS at this booth.

American National Red Cross, Washington, D. C. (*Booths 31–32*), displays the Scientific Blood Program exhibit. The left-hand panel shows, with flashing lights, the location of Blood Centers on a United States map. By means of further art work and copy the display visualizes blood therapy, pointing up, in the final section, a use of gamma globulin.

Bio-Sciences Information Exchange, Washington, D. C. (*Booth 207*). This exhibit will acquaint scientists with the value of this unique clearinghouse for current research. Staff of the Exchange will demonstrate the importance of cooperation and of the services available.

Direct myocardial action of oxidizable lipids. REINHARD H. BEUTNER, *Med. Research Lab., Des Moines Still College, Des Moines, Iowa.* (*Booth 87*). Electrical energy is generated by oxidation of unsaturated lipids as observed with the 'electro-biochemical energy converter.' This apparatus, demonstrated here, contains a layer of lipids oxidized on one side. Metallic electrodes are excluded, only materials occurring in the organism being used.

Animal Care Panel. N. R. BREWER, *University of Chicago* (*Booth 90*). The Panel offers to research personnel that utilize laboratory animals such services as supplying literature on the education of animal technicians, maintaining a laboratory animal reference information file, setting standards on animal care and regulations and maintaining an information service on laboratory animals.

Federation of American Scientists, Washington, D. C. (*Booth 266*). The exhibit will consist of a chart showing the route of Sr^{90} from soil to human bone and the discrimination factor along the route. Graphs show the levels of Sr^{90} in the United States in soil and human bone since 1954.

Federation of American Societies for Experimental Biology, Washington, D.C., and **Annual Reviews, Inc.,** Palo Alto, Calif. (*Booth 189*). Society journals and books will be displayed.

Simplified chemical tests in experimental animals. ALFRED H. FREE, ERNEST C. ADAMS,* ROBERT R. SMEBY,* CHAUNCEY O. RUPE,* HELEN M. FREE* AND MARION H. COOK.* *Miles-Ames Research Lab., Elkhart, Ind.* (*Booth 211*). Simple diagnostic tests which can readily and rapidly be carried out on a drop or two of urine facilitate evaluation of toxicity of new drugs. Daily screening tests afford recognition of the site of toxicity. Tests include those for detecting renal, gastrointestinal or liver injury, blood damage and metabolic disturbances.

Asian influenza—identification, diagnosis and vaccination. MAURICE R. HILLEMAN. *U. S. Army Med. Service, Washington, D. C.* (*Booth 33*). This exhibit describes the initial recovery and identification of the new Asian influenza virus; the methods for rapid diagnosis and typing; and

the early information relating to antibody response in volunteers receiving Asian influenza vaccine.

Inter-Society Committee for Increased Research Potential in Pathology (Subcommittee on Motion Pictures). *Natl. Cancer Inst., Bethesda, Md. (Booth 35).* The exhibit, under the title "Motion pictures pertaining to teaching and research in pathology," aims to make more readily available good motion picture films that relate to research in pathology per se, and/or increase research potential in pathology; and to improve utilization of these and other audio-visual aids at all levels.

Visualization of living soft tissue structures by ultrasonic methods. DOUGLASS H. HOWRY,* JOSEPH H. HOLMES, R. CUSHMAN* AND G. J. POSAKONY.* *Dept. of Medicine, Univ. of Colorado School of Medicine, Denver (Booth 205).* A technique has been developed to present a photographic picture of details of soft tissue structures such as neck, leg, liver, etc. These appear as a cross-sectional picture depicting arteries, veins, muscle fascia, subcutaneous tissues, etc. Detailed pictures of normal and pathological material in living subjects will be presented.

A pH slide rule for buffers. NORMAN R. JOSEPH. *Univ. of Illinois College of Medicine, Chicago (Booth 88).* *A* and *B* are logarithmic scales of acid and base concentrations. *C* and *D* are linear scales of pK and pH. When *A* and *B* correspond to acid and base concentrations of a buffer, pH corresponds to the position of pK.

A blood dialyzer of great adaptability. A. E. MACNEILL AND J. E. DOYLE (intr. by G. F. KOEPF). *Med. Fndn. of Buffalo and Univ. of Buffalo, Buffalo, N. Y. (Booth 208).* Various versions of this compact, parallel-flow tubular dialyzer are shown in physiologic and clinical applications: blood dialysis, ultra-filtration, evaporation, heat and gas exchange.

Tympanomanometric recording of auditory reflex in man. EMANUEL S. MENDELSON. *Air Crew Equipment Lab., Naval Air Materiel Ctr., Philadelphia, Pa. (Booth 201).* Diagrams of apparatus and recordings of pressure changes (as low as 1 μ Hg) from the outer side of the tympanic membrane in normal subjects during loud auditory stimulation. Demonstration of the method may be arranged upon request by interested parties.

Muscular Dystrophy Associations of America, Inc., New York City *(Booth 89).* The exhibit presents the following: 1) color transparencies with appropriate descriptions showing the manifestations of muscular dystrophy; 2) postural changes and characteristics of the early and advanced stages of progressive muscular dystrophy; 3) color transparencies of personnel engaged in activity involved in various MDAA-sponsored research projects under the grant-in-aid program. The new Institute for Muscle Disease, an MDAA-sponsored project now under construction, is pictorially and functionally described.

National Science Foundation, Washington, D. C. *(Booth 34).* This exhibit of the National Science Foundation, an independent agency of the Federal Government, highlights those Foundation programs of particular interest to members of the Federation of American Societies for Experimental Biology. These programs are concerned for the most part with the support of basic research and training and education in the sciences.

Prevention of transfusion reactions: use of intravenous prednisolone. FREDERICK M. OFFENKRANTZ, ANCEL BLAUSTEIN AND GEORGE BABCOCK, JR. (intr. by W. M. GOVIER). *Riverside Hosp., Boonton, N.J., Booth Memorial Hosp., Flushing, N. Y. and Rahway Hosp., Rahway, N.J. (Booth 202).* More than 300 transfusions have been given to 60 patients, using either 50 or 100 mg of i.v. prednisolone directly instilled into the blood. Each case presented a problem of previous reactions not prevented by antihistamines or of definite incompatibility. There was not a single instance of reaction in the entire series.

Mechanisms of heart pain and its relief. JOSEPH T. ROBERTS. *Cardiology Sec., VA Hosp., Buffalo, N.Y. (Booths 141, 142, 143).* Ischemia of somatic nerves was produced by ligation of coronary artery, by a reflex of vasospastic neuropathy, confirming the theory that referred pain is related to the role of blood vessels in nerves. Vasa nervorum were dilated with nitroglycerine of pentaerythritol tetranitrate (PETN) which also dilated coronary arteries when applied directly. These drugs, especially PETN in 'sustained relief' form, improved treatment of chronic angina pectoris. Experimentally, the author's methods for revascularizing heart could bring added arterial blood to myocardium, e.g. by *1)* implanting an artery in lumen of coronary sinus, artery or vein, in myocardium or across cavity; *2)* endocardial puncturing; *3)* imbedding end of coronary sinus in ventricle cavity.

O_2 and CO_2 electrode system for blood. JOHN W. SEVERINGHAUS. *Anesthesia Dept., Clinical Ctr., NIH, Bethesda, Md. (Booth 209).* Specially designed cuvettes for the Clark oxygen electrode and the Stow-type CO_2 electrode have been mounted in a miniature water bath also containing a tonometer for preparing blood of known gas

tensions. O_2 tension is read on a transistorized null-balance meter, and CO_2 tension on a pH meter.

Permanent aortic intubation in rats—scientific uses. JOSEPH W. STILL. *Washington, D. C.* (*Booth 86*). The exhibit demonstrates with pictures and text the surgical intubation procedure. It gives brief descriptions of different uses which have been made of the preparation, and suggests other uses which might be made. Pertinent references are given.

A chemical and radiochemical difference in the metabolism of tryptophan in implanted sarcoma 37 as compared with the Barrett carcinoma. M. X. SULLIVAN, JOHN E. FOLK* AND JAMES F. HAGGERTY.* *Georgetown Univ., Washington, D. C.* (*Booth 203*). The exhibits will consist of charts covering the various pathways of tryptophan; the chemical difference in sarcoma 37 as compared with the Barrett carcinoma; chemical findings with tryptophan C^{14} in alpha positions; general review of the charts.

Entertainment for Ladies

Monday, April 14

Registration—Ladies Headquarters, rooms 107–108, Bellevue-Stratford, 9:00 a.m.–9:00 p.m.

Tuesday, April 15

Morning—United States Mint; Philadelphia Museum of Art
Afternoon—University Museum Lecture Tour and Tea

Wednesday, April 16

All day trip via Fairmont Park and Valley Forge to Longwood Gardens; Luncheon at Longwood Gardens

Thursday, April 17

Morning—Trip through historic sites of Old Philadelphia, including Elfreths Alley; Luncheon at Bookbinder's Restaurant

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Hitchings, G.H., 849, **1303**; 914, **90**; 1341, **1509**
Hobbs, J.P., 1730, **145**
Hoberman, H.D., 958, **1026**
Hoch, F.L., 959, **1145**; 1292, **1073**
Hoch, G.E., 960, **1434**
Hoch-Ligeti, C., 1730, **145**
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Hogancamp, C.E., 283, **705**
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Holley, H.L., 1143, **952**
Holley, R.W., 964, **1200**
Holling, H.E., 289, **350**
Hollinshead, A.C., 1493, **1787**
Hollis, V.W., Jr., 26, **797**
Holloway, R.J., 1390, **560**
Holman, R.T., 965, **957**
Holt, J.P., 287, **860**
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Holtkamp, D.E., 1471, **1584**; 1494, **1580**; 1611, **1589**; 1870, **1967**; 1878, **58**
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Hopkins, F.T., 359, **9**
Hoppe, J.O., 1495, **1564**
Hopps, H.E., 2018, **2050**
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Horbett, A.P., 168, **1454**
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Horton, R.E., 2093, **2142**
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Howe, C., 2019, **2140**; 2058, 2181; 2086, **2141**
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Howell, J.B.L., 291, **781**
Howell, J.O., 250, **425**
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Hoyer, B.H., 2020, **2157**; 2066, **2065**
Hrenoff, A.K., **1789**
Hsia, S.L., 968, **1193**
Hsiung, G.D., 2021, **2084**
Hsu, J.M., 786, **1098**; 1881, **2007**
Huang, H.T., 969, **1510**
Huang, K.C., 334, **660**; 1432, **414**
Huang, T.F., 292, **288**
Hubbard, R., 970, **1274**
Hubel, D.H., 293, **817**
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Huennekens, F.M., 1323, **1006**; 1293, **1229**
Huffman, D.K., 1354, **1738**
Huggins, C.G., 971, **1015**
Huggins, R.A., 128, **657**; 352, **656**
Hughes, J.R., 295, **668**
Hughes, W.L., 972, **1410**; 2097, **2112**
Hummel, J.P., 973, **1133**
Hummeler, K., 2022, **2068**
Humoller, F.L., 405, **66**
Humphreys, G.K., 922, **1493**
Humphries, J.W., 1975, **2051**
Hundley, J.M., 1897, **1979**
Hunt, C.C., 296, **887**
Hunt, E.L., 337, **10**
Hunter, F.E., Jr., 974, **1344**
Hunter, F.M., 1869, **2000**; 1903, **1933**
Hunter, J., 1342, **1282**
Hunter, V., 1798, **1883**
Huntsman, D.B., 1870, **1967**
Huntzinger, J.A., 1479, **1530**
Hurlbert, R.B., 995, **1495**
Hurley, L.S., 1865, **2036**; 1882, **2035**
Hurlock, B., 1266, **1415**
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Hurn, M.M., 1774, **179**
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Iacocca, V.F., 2015, **2095**
Iampietro, P.F., 300, **878**; 355, **594**
Ibsen, K., 797, **165**
Ikawa, M., 1178, **1504**
Ikeya, J., 643, **844**
Imagawa, D.T., 1732, **1846**
Inamine, E., 1083, **1000**
Inchiosa, M.A., Jr., 301, **456**
Ingle, D.J., 1849, **1978**
Ingle, Dwight J., **422S**
Ingraham, J.S., 2023, **2102**
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Iodice, A.A., 977, **1035**
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Isbell, H., 1449, **1661**
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Issekutz, B., Jr., 1499, **523**
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Jacobsen, A., 1048, **213**
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Jacobson, E., 77, **816**
Jacobson, K.B., 979, **1279**
Jaffe, J.H., 1500, **1753**
Jagendorf, A.T., 980, **922**
Jahn, T.L., 563, **445**
Jahnes, W.G., 2041, **2066**
Jailer, J.W., 342, **725**
Jakoby, W.B., 1110, **1048**
Jameson, E., 1959, **120**
Janecek, J., 647, **439**
Jang, R., 1046, **1348**
Jardetzky, C.D., 1501, **1124**; 1502, **1183**
Jardetzky, O., 1501, **1124**; 1502, **1183**
Järnefelt, J., 981, **1210**
Jaroslow, B.N., 2026, **47**
Jarvik, M.E., 1503, **67**
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Jasper, H.H., 310, **64**
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Jay, G.E., Jr., 1796, **1859**
Jeanloz, R.W., 982, **1154**; **1064S**
Jeanrenaud, B., 680, **529**
Jeffay, H., 983, **1407**
Jellinek, M., 984, **943**
Jenerick, H., 312, **494**
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Jenney, E.H., 1504, **68**; 1590, **1749**
Jensen, D.R., 1982, **2187**
Jensen, H., 987, **212**
Jensen, J.H., 1978, **2153**
Jensen, K.E., 2027, **2177**
Jensen, L.S., 1898, **1957**
Jesaitis, M.A., 985, **1447**
Jewell, H.A., 1505, **1610**
Jinks, R., 822, **1474**
Jochim, K.E., 313, **696**
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Johnson, B.C., 1305, **1204**; 1855, **1980**; 1895, **1956**; 1899, **1977**; 1919, **1961**
Johnson, C., 1430, **1765**
Johnson, D., Jr., 1883, **209**
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Johnson, J.A., 509, **627**; 561, **299**
Johnson, Paul C., 315, **831**
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Johnston, J.M., 1326, **919**
Johnston, J.W., Jr., 320, **541**
Johnstone, R.M., 988, **1484**
Johson, A.B., 1064, **1228**
Joiner, P.D., 1652, **1631**
Jolley, R.L., 787, **968**
Jolley, W.B., 644, **765**
Jondorf, W.R., 1505, **1722**; 1541, **1595**
Jones, E., 1320, **981**
Jones, F., 453, **585**
Jones, J.D., 989, **2024**
Jones, R.E., 498, **457**
Jones, R.S., 1734, **1848**
Jones, T.W., Jr., 2083, **2176**
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Jordan, P.H., Jr., 1884, **1955**
Jorgensen, H.E., 321, **259**
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Jowsey, J., 1311, **1220**
Ju, J.S., 1907, **2010**
Jude, J.R., 1548, **1708**
Jungeblut, C.W., 2033, **2158**
Juras, D., 2010, **2061**

Kabakow, B., 1507, **1675**
Kabat, E.A., 2019, **2140**; 2086, **2141**
Kadin, H., 1885, **1922**
Kägi, J.H.R., 1292, **1073**
Kahn, S.G., 991, **225**
Kalan, E.B., 992, **1275**
Kalkhof, K.C., 85, **272**
Kallick, C.J., 1261, **1178**
Kallman, F.L., **126S**
Kalnitsky, G., 1268, **1059**
Kalow, W., 1508, **1717**
Kalser, S.C., 1658, **1597**
Kalter, S.S., 2029, **2086**
Kamal, T.H., 993, **877**
Kamin, H., 994, **1146**
Kamm, J.J., 1509, **1665**
Kammen, H.O., 995, **1495**
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Kanter, G.S., 322, **305**
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Kaplan, H.S., 1799, **1086**
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Karczmar, A.G., 1469, **1606**; 1510, **1769**
Kardesch, M., 283, **705**
Karnofsky, D.A., 1424, **1981**
Karnovsky, M.L., 997, **1283**
Karpeles, L.M., 325, **661**
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Karush, F., 2015, **2095**
Karvinen, E., 327, **565**
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Kass, D.J., 1203, **967**
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Kattus, A.A., 237, **755**
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Kearney, E.B., 903, **1205**
Keasling, H.H., 1629, **1663**
Keats, A.S., 1512, **1535**
Keck, E., 1942, **1946**
Keck, K., 1208, **1010**
Keeney, C.E., 326, **712**
Keister, D.L., 329, **1430**
Keith, T.B., 1851, **1913**
Keller, D.M., 392, **368**
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Kellogg, D.A., 1886, **251**
Kellogg, R.H., 330, **570**
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Keown, K.K., 1490, **1568**
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Keston, A.S., 999, **1317**
Keyl, A.C., 1657, **1684**
Keys, A., 228, **3**; 474, **587**; 522, **188**; 1836, **5**; 1946, **1974**
Khorana, H.G., 1000, **1129**
Khouri, E.M., 237, **755**
Kidder, G.W., 831, **1304**
Kik, M.C., 1887, **2016**
Kikuchi, G., 1226, **1032**
Kilbourne, E.D., 2031, **2178**
Killam, K.F., **34S**
Kimbel, P., 618, **778**
Kimeldorf, D.J., 337, **10**
Kimmel, J.R., 1001, **1272**
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Kimmey, J.R., Jr., 1514, **1576**
Kinard, F.W., 338, **312**
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King, C.G., 737, **1185**; **1983S**
King, D.W., 1680, **1792**; 1738, **1794**; 1797, **1796**
King, J.T., 369, **2025**
King, T.M., 339, **868**
King, T.P., **1138S**
King, W., 1708, **1849**
Kinosita, R., 1770, **115**
Kinsky, S.C., 1002, **1413**
Kinter, W.B., 340, **375**
Kipnis, D.M., 1003, **1295**
Kirksey, A., 1914, **1918**
Kirsch, M., 400, **752**
Kirschbaum, A., 1739, **105**
Kirschner, L.B., 722, **1090**
Kirshner, N., 219, **692**; 341, **691**
Kit, S., 1004, **1492**
Kitaoka, M., 2085, **2151**
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Klein, E., 38, **849**; 1707, **157**; 2032, **28**; **1901**
Klein, M.J., 1659, **1569**
Klein, P.D., 1006, **201**
Klein, R.L., 1515, **1573**
Kleinberg, W., 100, **804**
Kliman, A., 1740, **222**
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Klimas, J.E., Jr., 343, **522**
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Kline, O.L., 1947, **568**
Klinenberg, J.R., 972, **1410**
Klingman, G.I., 341, **691**
Klitgaard, H.M., 344, **791**
Knauss, H.J., 1148, **1184**
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Knigge, K.M., 346, **723**
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Knoefel, P.K., 1432, **414**
Knoll, J.E., 876, **1306**
Knox, A.W., 2083, **2176**
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Kobayashi, T., 918, **1392**
Koch, G., 1009, **1442**
Kochakian, C.D., 851, **1251**
Kochen, J., 1062, **1011**
Kodza, H., 2033, **2158**
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Koelle, W.A., 1516, **1604**
Koeppe, R.E., 1336, **1044**
Koff, G.Y., 1517, **1608**
Koffler, H., 918, **1392**
Koizumi, K., 350, **675**
Koketsu, K., 351, **734**; 1574, **191**
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Koltun, W.L., 1010, **1397**
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Kominz, D.R., 1011, **1269**
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Koppel, J.L., 1012, **187**
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Kornberg, A., 700, **930**; 1202, **931**; 2013, **2047**
Kornetsky, C., 1518, **1745**
Korngold, L., 2034, **2073**
Koshland, D.E., Jr., **1262S**
Kosky, P., 201, **690**
Kossmann, R.J., 630, **618**
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Kozloff, L.M., 1016, **1445**
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Kramer, R.A., 2035, **2049**
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Krantz, J.C., Jr., 1537, **1728**; 1538, **1759**
Krasna, A.I., 1017, **1507**
Kraus, W.L., 587, **770**
Kraybill, H.F., 1922, **1910**
Kreider, M.B., 355, **594**
Kretchmar, A.L., 1018, **2017**
Krieger, D.T., 356, **806**
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Krueger, R.C., 813, **1109**
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Krukowski, M., 1530, **1583**
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Kubota, R., 339, **868**
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Kuehn, A., 1522, **197**
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Kuhns, W.J., 2036, **2147**
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Kulka, J.P., 1742, **1869**
Kummerow, F.A., 1908, **231**
Kun, E., 1021, **1514**
Kunkel, H.O., 1022, **1393**
Kuo, P.T., 359, **9**
Kurbatov, T., 527, **428**
Kurland, D., 542, **431**
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Kuschner, M., 1690, **1864**
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Kwong, E., 1893, **4**
Kydd, G., 177, **318**; 360, **590**
Kyker, G.C., 1018, **2017**

LaBrosse, E.H., 1523, **1592**
Lacy, P.E., 1743, **1825**; 1829, **1826**
La Du, B.N., 1025, **1108**
Laken, B., 475, **680**; 1918, **1934**
Laki, K., 904, **1391**
Lalich, J.J., 891, **1046**; 1744, **1805**
Lambert, G.F., 1902, **55**
Lambert, H., 615, **301**
Lamberts, B., 1026, **1112**
Lambertsen, C.J., 361, **283**; 653, **276**; 1621, **190**
Lambooy, J.P., 1201, **1506**
Lamden, M.P., 1888, **2012**
Lancefield, R.C., 2037, **2094**
Landaburu, R.H., 573, **218**
Landahl, H.D., 1575, **72**
Landau, B.R., 1027, **970**
Landowne, M., 362, **768**
Landowne, R.A., 1045, **956**
Landy, M., 1979, **2144**
Lane, C.E., 138, **638**
Lane, M.D., 1889, **965**
Langan, T.A., Jr., 1028, **1170**
Lange, G., 1464, **1575**
Lange, K., 1745, **1854**; 1768, **1855**
Langley, L.L., 363, **745**
Langworthy, O.R., 2065, **1096**
Lannon, T.J., 1203, **967**
Lanza, S., 1487, **1776**
Lanzoni, V., 1524, **1635**
Lardy, H.A., 1078, **1337**
Large, R.E., 1212, **595**
Larson, C.L., 2081, **2089**
Larson, E., 1324, **1469**
Lasker, S.E., 364, **835**
Laskin, D.M., 990, **1217**
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Lassen, N.A., 391, **500**
Laster, L., 1029, **1166**
Laszlo, D., 610, **1224**; 1013, **1425**; 1610, **100**
Lategola, M.T., 365, **391**
Latimer, C.N., 366, **666**
Lauderdale, P.W., 1926, **1968**
Laurila, U.R., 1149, **1130**
Lavender, A.R., 367, **371**
Laver, W.G., 899, **1033**
LaVia, M.F., 2010, **2061**; 2038, **2168**
Lavik, P.S., 936, **1162**
Lavine, T.F., 1030, **1396**
Lawlor, D.P., 1031, **1880**
Lawton, A.H., 256, **577**
Layne, E.C., 746, **1470**
Lazanas, J.C., 1353, **1018**
Lazarus, S.S., 1746, **1827**
Leach, R.M., Jr., 1956, **2038**
Leake, C.D., **687S**
Leape, L.L., 340, **375**
Leary, D.E., 1436, **193**
Leathem, J.H., 139, **376**
LeBaron, F.N., 1032, **1286**
LeBlanc, J., 368, **307**
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